



TAMPEREEN TEKNILLINEN YLIOPISTO  
TAMPERE UNIVERSITY OF TECHNOLOGY

TOMMI VALKONEN

## UNDERSTANDING AND DEVELOPING DECISION MAKING IN MANUFACTURING RELOCATIONS

A Case Study on Offshoring and Backshoring

Master's Thesis

Examiners: Professor Petri Suomala  
and assistant professor Teemu Laine  
Examiners and topic approved by the  
Faculty Council of the Faculty of  
Business and Built Environment on  
9<sup>th</sup> November 2016

## ABSTRACT

TAMPERE UNIVERSITY OF TECHNOLOGY

TOMMI VALKONEN: Understanding and Developing Decision making in Manufacturing Relocations: A Case Study on Offshoring and Backshoring

Tampere University of Technology

Master of Science Thesis, 70 pages, 2 Appendix pages

November 2016

Master's Degree Programme in Industrial Engineering and Management

Major: International Sales and Sourcing

Examiners: Professor Petri Suomala and assistant professor Teemu Laine

**Keywords:** decision making, offshoring, backshoring, management accounting information, decision making effectiveness

Since the 1960's, companies have searched for competitive advantage from offshoring their manufacturing processes to countries of lower labour cost, or countries that are located closer to interesting markets. However, since about 2005, the trend has partly reversed: large amounts of offshoring projects face unprecedented costs and setbacks, making domestic production more favourable again. The reasons for both offshoring and backshoring of production have been studied in detail, but little focus has been given to how those decisions unfold day by day in the board rooms.

In this study, three case companies, one offshoring case and two backshoring cases, were interviewed to find out how manufacturing relocation decisions are really made. The investigation was divided into four major sub-questions: how could the case decisions processes be modelled; what is the role of management accounting information in those decisions; what factors affect the risk perceptions of decision makers, and; how could the decision making processes be improved.

It was found that offshoring and backshoring decisions are very different by nature due to the differences in uncertainty that the decision makers have to deal with. The myriad of options and factors present in choosing an offshore location from anywhere in the world translates into huge information and accounting needs, as well as complex decision making processes including several nested subdecisions. Meanwhile backshoring decisions were found to be very straightforward, less reliant on large amounts of accounting information and less time consuming to implement. This is due to the fact that these decisions usually consider only two locations, the offshored and the domestic location, both of which are well known and measured. The case companies were also asked to determine what parts of the decisions they would want to improve the most. The high level conclusion is that companies that seek global success should remain extra vigilant of the immense complexity of these decisions, and that there is a clear need to quantify and concretify the benefits of domestic production, such as quality, flexibility and trust between suppliers and partners.

## PREFACE

The topic of this thesis was chosen due to two major factors. Firstly, I am personally very interested in the psychology of decision making. Secondly, a project regarding manufacturing relocation decisions happened to be underway at the department of industrial engineering, Tampere University of Technology. It did not take long for me to reach for the possibility to spend a tremendously interesting half a year studying this important field.

The research process began in late spring 2016, and was finalized in late September. I am thankful for having the chance to concentrate 100 % on conducting the research and writing the thesis, as many times thesis workers from my background tend to work at the same time. This gave me the possibility to immerse myself in the subject and become a professional in this academic niche.

I want to thank my examiners professor Petri Suomala and assistant professor Teemu Laine for their guidance and feedback throughout the process, senior research fellow Jari Paranko for his advice and help with contacting case companies, the company representatives for their time and attention in the interviews, and the rest of the ROaMING project team for the interesting discussions and support over the summer.

Tampere, 26.9.2016

Tommi Valkonen

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## LIST OF TERMS AND ABBREVIATIONS

CEO	Chief Executive Officer
VP	Vice President
Brownfield	An investment in an existing company or facility
Greenfield	An investment that is not connected with existing companies or facilities
FDI	Foreign Direct Investment
SME	Small or Medium-size Enterprise
MA Information	Management Accounting Information

.



# 1. INTRODUCTION

## 1.1 Background

When companies face pressures to improve their profitability, the low hanging fruit are often searched for abroad. The last two or three decades have been marked by legions of companies in the developed countries relocating their manufacturing activities to countries where they can, first and foremost, enjoy substantially lower labor costs (Karmarkar 2004; Lewin & Peeters 2006), and choosing to concentrate their domestic presence on core activities that cannot be outsourced or offshored.

However, many of these offshoring projects face unexpected difficulties and realizations of unforeseen risks, relating especially to shortcomings in flexibility, quality and ability to supply the global supply chain (Kinkel & Maloca 2009). On the other hand, external changes in the business environment, such as lack of client acceptance, political backlash or demand fluctuation, add to the pool of arguments that have caused many companies to relocate manufacturing back to the country of origin (Lewin & Peeters 2006; Gylling et al. 2015).

Backshoring took off as a global phenomenon after roughly 2005 (Kinkel 2012; Tate 2014). The reason why the trend took off in this point in time has been accredited to increases in domestic productivity and new-found salience of hard-to-measure qualities, such as the value of strict property rights and ease of innovation and product development in domestic locations (Tate 2014). The emergence of backshoring seems to have caused a renewed academic interest in manufacturing relocation decisions, both offshoring and backshoring (Mihalache & Mihalache 2015; Stentoft et al. 2016). The research has uncovered, among other things, a comprehensive set of reasons that most often drive relocations one way or the other, how those projects are controlled and coordinated, and the expected success or profitability of the relocations (Mihalache & Mihalache 2015). However, much remains to be investigated about how the decisions are triggered and carried out in board rooms, how management accounting information is utilized in the decisions and how the decision making processes themselves could be developed. Understanding these aspects is crucially important, because all successful and failed projects originate in the decision making process. Pointing out specific weak points in the decision routines of case companies or identifying gaps in accounting information could provide concrete improvements into how offshoring and backshoring projects unfold globally.

## 1.2 Objectives and scope

This thesis is concerned with understanding how the decisions to move manufacturing abroad and back again unfold phase by phase in the board rooms. The specific objective is set as

“to advance knowledge about how real offshoring and backshoring decision processes take place and how management accounting is utilized in them, and to provide input into how the processes can be developed”.

As the work on the thesis proceeded, the literature review uncovered four specific research gaps that became the four research questions for this thesis:

1. How can offshoring and backshoring decisions be modeled?
2. What is the role of managerial accounting information in them?
3. What factors influence decision makers’ assessments of risks and benefits in these decisions?
4. How could companies make more effective offshoring and backshoring decisions?

The motivation to choose this topic builds on findings from the ROaMING research project mainly executed and managed by the Center for Research on Operations, Projects and Services (CROPS) at Tampere University of Technology (TUT). Significant contributions to the project is also provided from the Cost Management Center (CMC) at TUT, under which the research for this thesis was conducted. CMC’s role in the project is to concentrate on the role of management accounting information in a holistic decision making environment, that is not constrained to mere rational optimization. In other words, the whole decision making process is considered in order to best make sense of the use of accounting information.

Put shortly, ROaMING concentrates on investigating offshoring and backshoring activity in Nordic companies, the reasons for it, the decision making processes relating to it and the role of ecosystems and innovations in it (Heikkilä et al. 2015). Further motivation for the topic of this thesis is added by the researcher’s genuine interest in understanding the behavior and decision making of top executives.

The scope of the research is limited to Finnish medium or large sized enterprises. However, the results are not specifically bounded to apply only to Finnish or Nordic countries.

### 1.3 Research process

The research was conducted as a case study with semi-structured interviews as the main data gathering method. An interventionist element was also included in an effort to validate the effectiveness of suggestions to improve the decision making processes of case companies.

The research process started with establishing a research relationship with two Finnish companies. The case of interest in the first of these was an offshoring decision, and a backshoring decision in the other. Later on a third company with a backshoring focus was contacted and included in the research. The theoretical background for systematically analyzing results was drafted before the collection of data was begun. The research objective was pursued next by interviewing 2-4 people from each company. The interviews advanced in a design where the first interview was spent in constructing a basic timeline of how the decision process unfolded, followed by interviews that concentrated on filling gaps on the timeline and understanding under-the-surface factors that affected decision making along the process. After analyzing the interview data with respect to the theoretical background, the research results and recommendations for improving the decision making processes were sent for review to the interviewees, who were also asked to comment about the real life practicality of the recommendations. These comments provided further value into whether the suggested improvements would actually be worth considering in a global decision making context. Finally, a synthesis of all analyzed data was formed in order to answer the research questions in a systematic manner.

### 1.4 Structure of the thesis

The thesis contains six chapters. The objectives and contents of the remaining chapters can be described as follows:

Chapter 2 pinpoints specific questions under the theme of manufacturing location decisions to which this thesis sets out to provide answers. The chapter first presents a literature review, providing an overview of definitions, brief history and recent research in the field. The last section presents the research questions, which are targeted at identified research gaps from the review.

Chapter 3 is concerned with forming a theoretical background to support the selected research questions. The chapter seeks to build rigid frameworks with which the questions can be approached purposefully and the gathered data analyzed systematically.

Chapter 4 introduces the researcher's choices of research methodology and data gathering methods, including an assessment of vulnerabilities relating to validity, reliability and generalizability of the results. In the last section, the research process is described in more detail, including short descriptions of the case companies.

Chapter 5 presents the results of the research case by case, along with a general synthesis of what implications the results have in relation to each other.

The sixth and final chapter provides answers to the research questions, an assessment of research contributions and managerial implications, limitations and suggestions for further research.

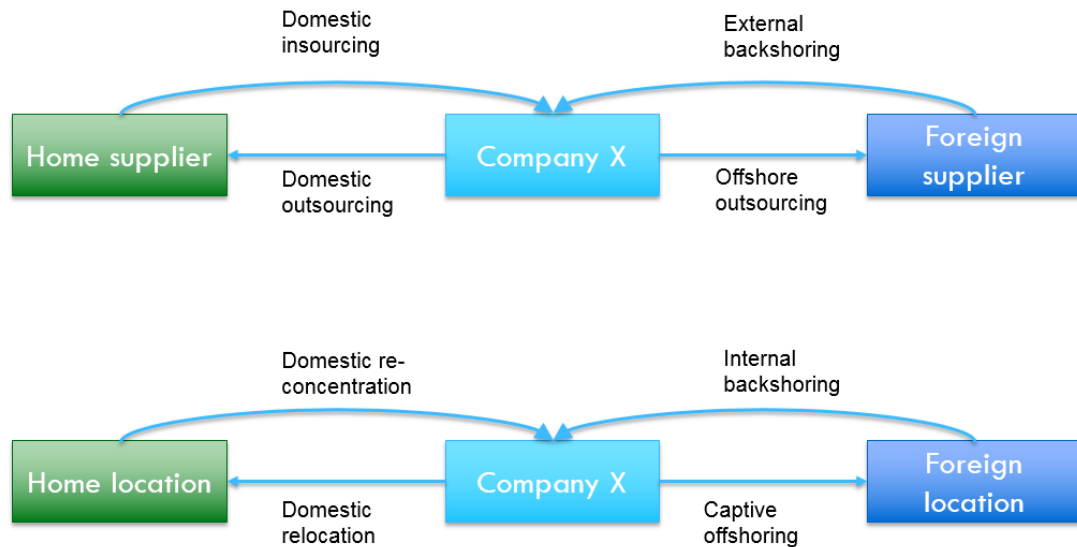
## 2. OFFSHORING AND BACKSHORING: LITERATURE REVIEW

This chapter is structured as follows. Sections 2.1 and 2.2 include important definitions and a brief look at the history of offshoring and backshoring manufacturing as a global phenomenon. Section 2.3 introduces recent findings from research done in the field, from which research gaps are identified. The fourth and final section formulates the research questions of this thesis in order to fill the identified research gaps.

### 2.1 Definitions of offshoring and backshoring

Offshoring relates to moving manufacturing or other business processes out of the country to a subsidiary, while ownership and control are kept internal to the company (Lewin & Peeters 2006). Offshoring should be distinguished from the term outsourcing, where ownership and control are transferred to a third party. (Bettis et al. 1992). Kinkel and Maloca (2009) specify the former type of offshoring as *captive* offshoring. Offshoring is usually a more intensive and risky exercise in internationalization than outsourcing, because firms are left with the challenge of coordinating and integrating the offshored operations with the rest of the global organization (Larsen et al. 2013; Srikanth & Puranam 2011).

Moving business processes in the opposite direction, or repatriating them, has been termed internal backshoring (Kinkel & Maloca 2009), insourcing (Arlbjørn & Mikkelsen 2014) and reshoring (Tate 2014). For the purposes of this thesis, the term backshoring is adopted, as it more fittingly separates production movement back to the country of origin from moving production between two foreign locations, which might more aptly be defined as reshoring. A clarifying schematic of these various terms is presented in Figure 1:



**Figure 1: Terms for relocating production (adapted from K.C. 2015)**

As for the rest of this thesis, the chosen terms of interest will be simply offshoring and backshoring, so that they specifically refer to *moving manufacturing facilities across national boundaries and back to the country of origin while retaining ownership and control of the facilities*, unless specified otherwise.

For consistency, some quotes from literature sources that use the term reshoring in the same meaning as backshoring have been revised to include the term backshoring.

## 2.2 Brief history of offshoring and backshoring production

Offshoring as a phenomenon is not new, as various forms of it has taken place for more than 50 years (Ferdows 1997). Important drivers for offshoring in the early years included cheap competing imports and rising labor costs in developed countries, which consequently pushed companies to offshore their production to developing countries (Moxon 1975). The popularity of offshoring has gained a new boost over the last two decades, mainly due to advances in information technology and global cost differentials (Karmarkar 2004; Lewin & Peeters 2006). Along this boost also SMEs have become increasingly active in international production (Kinkel & Maloca 2009). Arriving at accurate numbers about what percentage of companies in developed countries own offshored production is very difficult, because making the distinction between outsourcing, offshoring and various types of supplier relationships is not easy from outside the companies in question. Nevertheless, some indication of the popularity of offshore activities can be drawn from articles in the Economist. It is stated that the share of American and European companies' overseas production contracts with an ownership element (meaning at least some degree of ownership is retained) was estimated as 69 % in 2012 (Economist 2013a).

Furthermore, the annual negative impact of offshoring on US jobs has been estimated to be between 150 000 and 650 000 (Economist 2013b).

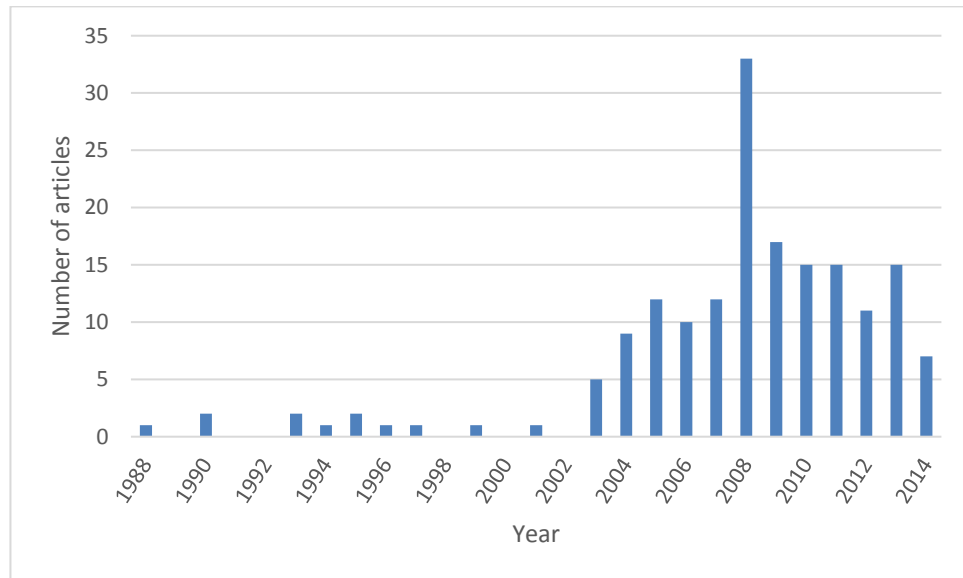
The phenomenon of bringing production back has become increasingly prevalent since roughly 2005 (Kinkel 2012; Tate 2014; Fracocchi et al. 2014). The specific drivers for this to happen in this point in time specifically are largely uncertain, but one explanation could be the rise in domestic productivity brought about by technological innovations (Tate 2014) such as cutting-edge robotics and automation. According to Kinkel (2014) for every three offshoring companies in Germany there is now one active in backshoring production. In a recent survey to 320 U.S. companies, 40 % reported perceiving a trend toward backshoring to the United States (Tate 2014). In addition, according to a survey by the Boston Consulting Group, more than half of over 200 U.S. companies with sales greater than \$1 billion are moving production back (Boston Consulting Group 2013). Some global reasons for this trend might have included the 2008 recession (Ellram, Tate & Petersen 2013; Ellram, Tate & Feitzinger 2013), the rising cost of labor in developing countries, high oil prices, increased transportation costs and a growing awareness of global supply chain risks (Tate 2014).

The impact of backshoring has attracted attention from governments as well (Stentoft et al. 2016), due to reasons such as job creation, potential for key innovations and the potential to increased exports and reduced imports (EPRS 2014). Some examples of concrete measures to incentivize bringing production back include Germany's 200 million euro "Industrie 4.0" program (Germany Trade & Invest 2014) and the U.S.'s 40 million dollar "Make it in America" initiative (Weisfuse & Comerford 2014), which aim at providing grants to backshoring projects.

These figures paint a clear picture: offshoring took off in around the 1960's and gained speed as globalization took its first steps in the world, but in the 21<sup>st</sup> century the parameters of global production have seemed to change in a way that producing domestically has become interesting again. The next section will examine existing research on what exactly those changes and factors might be.

### 2.3 Recent research in the field and identified research gaps

The study of offshoring has been active since the 80's but there has been a clear increase in research activity after the turn of the century (Mihalache & Mihalache 2015), possibly mirroring the emergence of the backshoring trend. Figure 2 illustrates this increase year by year:



**Figure 2: The frequency of published research articles on offshoring from 1988 to 2014 (Mihalache & Mihalache 2015)**

In the same article, Mihalache & Mihalache (2015) break down how researchers have focused on different aspects of offshoring. Table 1: Articles on offshoring 1988 to 2014 by category (Mihalache & Mihalache 2015) lists these focus areas and the amount of research papers analyzed by Mihalache & Mihalache – a proxy for the amount of general academic interest in each of the areas. The table also highlights select areas of interest for this thesis:



**Table 1: Articles on offshoring 1988 to 2014 by category (Mihalache & Mihalache 2015)**

Topic	Questions of interest	Amount of articles
<b>Ownership decision</b>	What factors affect the choice of ownership?	12
<b>Partner choice decision</b>	How do firms select offshore vendors for out-sourced activities?	13
<b>Control &amp; coordination decision</b>	What control and coordination options do firms have? What drives their costs?	40
<b>Deciding which business activity to offshore</b>	How do characteristics of the activity affect the risks of offshoring?	10
<b>Making the offshoring decision</b>	What are the motivations and risks of offshoring?	53
<b>Location decisions</b>	What factors affect the choice of the offshore location?	28
<b>Offshoring performance</b>	How well do offshoring projects meet their objectives?	24
<b>Firm level outcomes</b>	What effects do offshoring decisions have on the companies?	27
<b>Macro level outcomes</b>	What effects does offshoring have globally?	6

The three highlighted research areas are selected because they most closely relate to the specific step-by-step decision making processes that are in the focus of this thesis. Research from these areas will be examined in detail through sections 2.3.1 – 2.3.4.

A similar systematic review on the side of backshoring was made by Stentoft et al. (2016), who witnessed a considerable increase in the amount of backshoring articles since 2012. They categorized articles on backshoring and related themes in terms of research methodology, industry type and the specific drivers that emerge as causes to backshoring decisions. They found 20 articles from 2009-2016 that directly addressed backshoring, accompanied with more that covered related themes. Table 2: Backshoring drivers and specific issues covered in articles 2009 to 2016 (Stentoft et al. 2016) presents the seven driver categories into which Stentoft et al. distributed the articles they analyzed:

**Table 2: Backshoring drivers and specific issues covered in articles 2009 to 2016 (Stentoft et al. 2016)**

Driver examined	Specific issues	Selected articles
<b>Cost</b>	Cost of labor, logistics, energy; eroding cost advantage; miscalculation of costs; productivity differences; need for small production runs	(Kinkel 2012; Kinkel 2014; Fratocchi et al. 2014; Gylling et al. 2015)
<b>Quality</b>	Quality not at an acceptable level	(Arlbjørn & Mikkelsen 2014; Kinkel & Maloca 2009)
<b>Time and flexibility</b>	Delivery lead-time; demand volatility; production and delivery reliability	(Fratocchi et al. 2014; Kinkel 2014; Bailey & Propriis 2014)
<b>Access to skills and knowledge</b>	Proximity to R&D and resources; availability of skilled labor; utilization of new technologies and automation	(Arlbjørn & Mikkelsen 2014; Bailey & Propriis 2014; Stentoft et al. 2015)
<b>Risks</b>	Threat of losing know-how and intellectual property; supply chain risks; volatility in exchange rates	(Gray et al. 2013; Tate 2014; Gylling et al. 2015)
<b>Market</b>	Loyalty/patriotism; value of “Made in X”; staying close to customers; shrinking market size	(Canham & Hamilton 2013)
<b>Other factors</b>	Incentives from governments; increased focus on core activities; correction of a misjudged decision	(Arlbjørn & Mikkelsen 2014; Stentoft et al. 2015; Tate 2014)

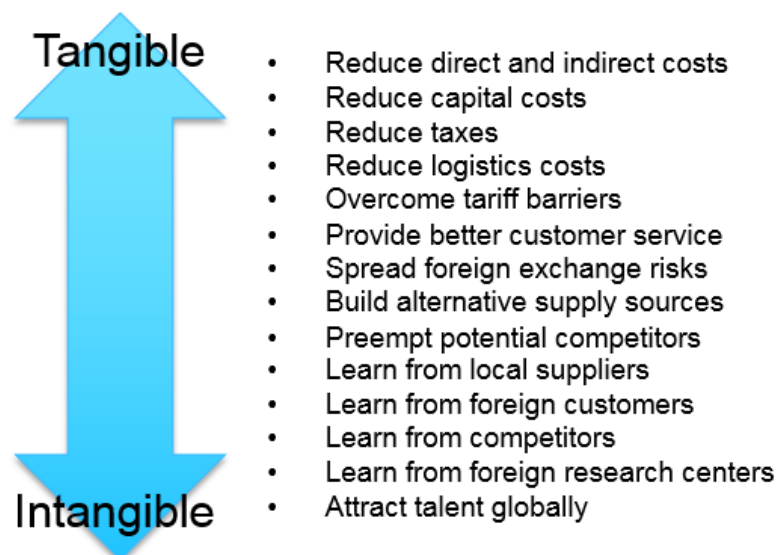
It can be concluded that the majority of current backshoring literature concentrates on understanding the driving reasons to backshore. As Stentoft et al. (2016) explicitly note, no articles seemed to cover specifically the decision making process that led to the actual backshoring of manufacturing – how exactly did the decision makers receive, use and analyze information from various sources to form the initial motivation to backshore? Hence there is a clear gap in the literature, calling for case-based research on how some of these decisions unfolded.

The next four sections present a selection of studies that exemplify the current understanding of the areas of interest highlighted in Table 1, but in a manner that both offshoring and backshoring aspects are taken into account, where appropriate.

### 2.3.1 Motivations for offshoring and backshoring

Research has discovered plenty of indications that the reasons for offshoring and backshoring decisions differ significantly. Offshoring was and still is practiced mainly in order to cut production costs and improve distribution and productivity (Kinkel 2012; Heikkilä et al. 2016; Ferdows 1997; K.C. 2015). Kedia and Mukherjee (2009) identified further reasons, arguing that the competitive advantage of offshoring can stem from disintegration (e.g. innovation, speed, flexibility and cost reduction), location-specific resourcing (e.g. infrastructure and human capital) or externalization (e.g. learning and specialization).

Ferdows (1997) lists a variety of reasons for offshoring with respect to tangibility, as presented in Figure 3:



**Figure 3: Reasons for offshoring with respect to tangibility (Ferdows 1997)**

Apart from the mentioned reasons, offshoring can also act as an enabler for competitiveness. In the interesting case of Helkama, a Finnish manufacturer of the popular bike model “Jopo”, offshoring of production was not only primarily a cost cutting exercise, but it also provided the company a chance to breathe and critically assess their production methods in Finland. In the end, streamlining the domestic facility became a significant factor in making domestic production favorable again (Gylling et al. 2015). The facility would probably not have had a chance to become competitive without first offshoring the production to make room for improvement.

Lastly, Pennings & Sleuwaegen (2000) provide insight into what kind of companies have a higher propensity to offshore manufacturing: companies that operate within labor intensive industries, that are larger in size, that are more profitable or that belong to a multinational group tend to relocate manufacturing abroad more often than other companies.

On the other hand, companies that have no previous experience of foreign direct investments are less likely to relocate (Pennings & Sleuwaegen 2000).

The reasons for backshoring are somewhat more complex. The overarching reason for backshoring is some form of dissatisfaction with the performance of the offshored facility or process. In 2005, Boston Consulting Group and Gartner predicted that about 50 % of all offshoring contracts signed by US companies between 2001 – 2004 would fail to meet expectations (Aron & Singh 2005). The amount of backshoring since 2005 testifies that their prediction was right to a significant degree.

The actual driving reasons to backshore can be categorized into two groups. On one hand, many offshoring companies fail to generate expected benefits due to inadequate calculation of operational and structural risks, lack of knowledge about the foreign destination, or lack of systematic location planning, leading to unforeseen costs and difficulties in managing the offshoring operation (Stringfellow et al. 2008; Larsen et al. 2013; Aron & Singh 2005; Anderson et al. 1998). A survey for 200+ Finnish companies by Heikkilä et al. (2016) speaks a similar story, as it concluded that the main reasons to backshore production back to Finland are flexibility, quality, lead time and logistics costs.

On the other hand, production might be repatriated after there is a change in the competitive environment that makes domestic production desirable again, such as demand fluctuation (de Treville & Trigeorgis 2010; Gylling et al. 2015). These cases could be categorized differently from the aforementioned, since they do not necessarily involve an internal miscalculation of the current situation and manufacturing needs.

Selected key reasons for both offshoring and backshoring are summarized in Table 3: Summary of key reasons for offshoring and backshoring.

***Table 3: Summary of key reasons for offshoring and backshoring***

Reasons for offshoring	Reasons for backshoring
<ul style="list-style-type: none"> <li>• Reduce direct and indirect costs</li> <li>• Reduce capital costs</li> <li>• Reduce taxes</li> <li>• Reduce logistics costs</li> <li>• Overcome tariff barriers</li> <li>• Provide better customer service</li> <li>• Spread foreign exchange risks</li> <li>• Build alternative supply sources</li> </ul>	<ul style="list-style-type: none"> <li>• Eroding cost difference</li> <li>• Quality</li> <li>• Time and flexibility</li> <li>• Lead-time</li> <li>• Demand volatility</li> <li>• Proximity to R&amp;D and product development</li> </ul>

To summarize, the reasons to offshore and backshore are understood rather well: companies offshore mostly due to production costs, and backshore due to quality and flexibility issues, or due to a change in the global competitive environment. The next interesting

topic examined in the next section is that of how the risks of these decisions are perceived at the company level.

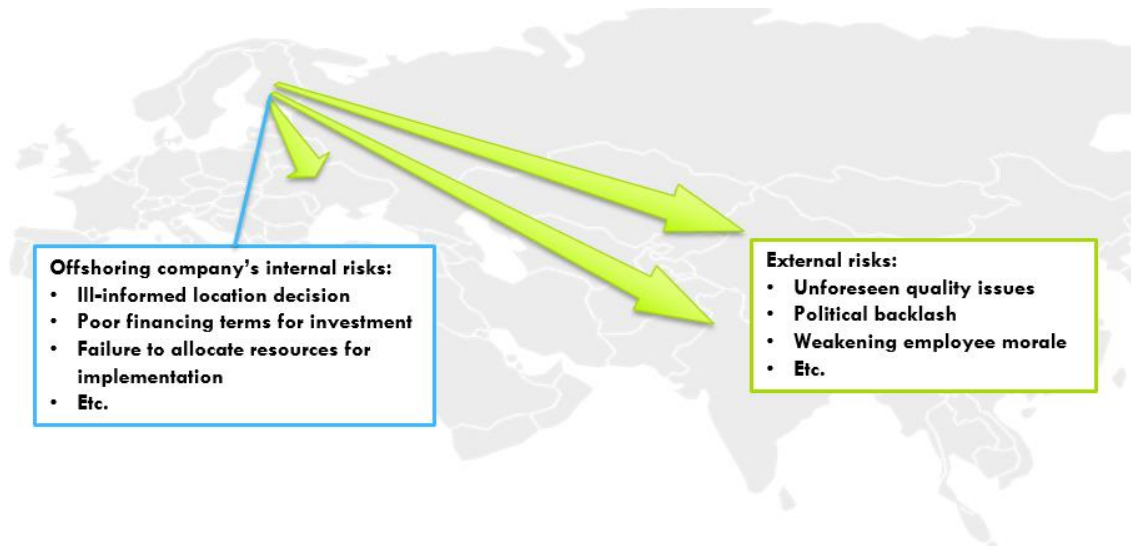
### **2.3.2 Risks for offshoring and backshoring**

Offshoring and backshoring are investment decisions that involve risk by definition. What separates offshoring from other kinds of manufacturing investments is mainly the physical distance between decision makers and the final production location, as well as the factor of cultural differences between nations. Gray et al. (2011) learned, for example, that offshoring is correlated with an increased quality risk due to difficulty of transferring all the necessary knowledge to retain a desired level of quality.

A variety of specific offshoring risks can be listed as follows (Lewin & Peeters 2006):

- Lack of data security
- Lack of cultural fit
- Poor quality
- Loss of control
- Lack of client acceptance
- Political backlash
- Disaster recovery
- Infrastructure instability in host country
- Operational inefficiency
- Employee turnover
- Weakening employee morale

As can be seen, the decrease in costs that motivates offshoring is effectively “paid for” by a multitude of new risks. There is, however, an additional category of risk relating to the decision process itself. The risks identified by Lewin & Peeters assume that the offshoring decision and implementation was successful in and of itself. Kinkel & Maloca (2009) explored risks internal to the decision process and argue that the realized risks that trigger backshoring decisions most often relate to unexpected shortcomings in flexibility, ability to supply the global supply chain and quality, implying that there is a significant risk of simply doing an ill-informed decision in the first place. They state that offshoring decisions should in fact never be based solely on labor cost comparisons – which paradoxically is the main reason to offshore. Therefore, there are two main categories for the riskiness of an offshoring decision: internal risks originating from the decision making prior to offshoring and external risks that originate in the lessened control, increased distance and differing cultural settings once the decision is implemented. Figure 5 clarifies this dichotomy:



**Figure 4: Internal and external risks of offshoring**

The risks of backshoring have not been studied in detail, but they can be expected to be smaller compared to offshoring, since organizations have more control on and information about manufacturing that takes place closer to where decisions are made. Similarly, the internal risks can be expected to be lesser, since backshored facilities are set up in a familiar country to the decision makers by definition. Even though in some cases the labor costs are returned to a higher level than during the offshoring period, it is the recovered amount of certainty that lowers risks.

While the risks are generally well understood at the firm level, no publications were found to have taken a proactive viewpoint into how perceptions of risk are created for individual decision makers. This gap in the literature has been explicitly recognized by Mihalache & Mihalache (2015):

*"[Further research is needed to] advance knowledge on the factors that influence decision-makers' assessments of offshoring's benefits and risks such as offshoring experience."*(Mihalache & Mihalache 2015)

Especially interesting would be to understand what qualities, quantitative or qualitative, of specific location options cause specific perceptions of risk to emerge in decision makers' minds.

### **2.3.3 Factors affecting the choice of an offshore location**

After the initial motivation to offshore production somewhere, the problem of choosing a location arises next. Hahn et al. (2009) argue that the main factors that influence the location choice include wages, education, language and risk. They also emphasize the fact that while cost reduction seems to be the main driver to execute an offshoring decision, its role in directing the actual location decision diminishes to being one of several

important factors. This makes sense, because in the end, there is no gain in offshoring if the relocated facility is not manageable due to language barriers, poor worker skills or other such risks.

Glaister & Demirbag (2010) found that at the firm level previous experience of either similar offshore activities or activity within the targeted country increase the likelihood to relocate to that country. The degree of standardization is also an important factor that affects location decisions: tasks of high standardization and low complexity tend to be relocated to Asia, Central Europe or Eastern Europe (Jensen & Pedersen 2011).

While these studies provide a good overview of the things that have affected location decisions, they are all retrospective. They do not capture the viewpoint of active decision making – in what sort of situations are the factors mentioned considered, how are they analyzed and what factors act as the crucial ones that make or break an individual decision about a location? This is another viewpoint that this thesis tries to clarify.

### **2.3.4 Offshoring performance**

Once the decision to offshore has been made, the crucial phase of implementing begins. As mentioned before, there is a rather high probability that these projects face unexpected costs or other problems that for some reason could not be seen beforehand. The literature on offshoring performance seeks to understand what are the most important factors that determine the success of an offshoring decision.

One way to approach this problem is to find out where the unexpected costs and problems most often originate from. According to Dibbern et al. (2008), extra costs are mainly incurred due to four types of activities: requirements specification and design, knowledge transfer, control and coordination. They also mention that cultural and geographical distance between locations seems to increase the extra costs.

A second approach is to directly investigate projects that have succeeded well. Indications can be drawn for example from the area of information technology outsourcing, which has been studied to a greater detail than manufacturing offshoring. Three major categories of determinants for IT outsourcing success included decision making, contractual governance and relational governance (Lacity et al. 2009). First, decisions that included the involvement of senior managers and rigorous evaluation processes were associated with higher levels of outsourcing success. Second, strong contractual governance refers to more contract detail, shorter-term contracts and higher-dollar valued contracts, which is also connected to better performance. Third, relational governance was found to improve performance through trust, norms, open communication, open sharing of information, mutual dependency and cooperation.

One further aspect is to understand how offshoring performance could be secured prior to making a decision. K.C. (2015) suggests three specific items that should be considered especially by SME's. First, companies should thoroughly understand their costs in the entire value chain. Cost analysis should be rigorous enough to provide a comparative analysis of both direct and indirect costs in both the domestic and foreign scenarios, while also taking into account the uncertainty with unexpected costs that can arise from the decision. Second, networking and partnering with other companies is important, which can open possibilities to both information sharing, innovation and other synergy benefits. Third, companies should understand their target markets and what their customers really value.

Room remains for further studies into this final aspect. In addition to these high-level factors mentioned, how should managers manage their day-to-day decision making process to ensure successful relocation decisions?

## 2.4 Research questions

As an understanding of current research in offshoring and backshoring decisions has been established, the research questions for this thesis can be set. The research objective was set in section 1.2 as

“to advance knowledge about how real offshoring and backshoring decision processes take place and how management accounting is utilized in them, and to provide input to how the processes can be developed.”

The research objective will be guided by four research questions, as outlined in Table 4: The research questions of the thesis

*Table 4: The research questions of the thesis*

Research question	Main source of identified research gap
<b>1. How can offshoring and backshoring decision processes be modeled?</b>	ROaMING project (Heikkilä 2015)
<b>2. What is the role of managerial accounting information in them?</b>	
<b>3. What factors influence decision makers' assessments of risks and benefits relating to offshoring and backshoring of production?</b>	(Mihalache & Mihalache 2015; Stentoft et al. 2016)
<b>4. How could companies make more effective offshoring and backshoring decisions?</b>	(K.C. 2015)



The motivation for the first and second questions comes from the aforementioned ROaMING-project, as one of the major research questions for the whole project is (Heikkilä 2015):

*“How do companies make decisions about [back]shoring production and innovations related to it, and what is the role of management accounting information in this decision making?”*

It should be noted that even though not stated in the ROaMING research question, all research questions of this thesis address not only backshoring decisions, but offshoring as well. While ROaMING has gained some ground into understanding the amount and type of decisions made and the high-level reasons for them, the actual day-to-day tasks and processes relating to the decisions have not been investigated (Heikkilä et al. 2016; Stentoft et al. 2016). The literature review confirmed the view that little research into this specific issue has been made so far. Thus one of the objectives of this thesis is to investigate and describe those processes in their natural surroundings, with a special focus on how management accounting information is utilized.

The third question is motivated by a need to understand what inputs and attributes affect the way managers assess different location options. Mihalache and Mihalache (2015) explicitly identified a gap in the offshoring literature as follows:

*”[Further research is needed to] advance knowledge on the factors that influence decision-makers’ assessments of offshoring’s benefits and risks such as offshoring experience.”* (Mihalache & Mihalache 2015)

On the other side, Stentoft et al. (2016) identify in their review article a similar gap in the literature concerning backshoring:

*“Future research should address the questions of accessibility, relevance, representation, and accessibility of data for decision making about offshoring and [back]shoring.”* (Stentoft et al. 2016)

Combining these two gaps in literature, it can be said that there is a call for future research to take a step deeper into what factors are at play when an individual seeks information and perceives risks related to offshoring and backshoring investment options under uncertainty.

Finally, a master’s thesis on the reasons behind offshoring and backshoring by K.C. (2015) done at Tampere University of Technology concluded that further research should be directed towards understanding how companies (especially SMEs) could improve their offshoring and backshoring decision making processes:

*“It is ... worth looking into how SMEs can make informed offshoring/[back]shoring decisions in order to avoid circumstances threatening their sustainability.”*  
(K.C. 2015)

This research gap, also confirmed by the literature review into offshoring performance, is in a natural continuum with the first two identified gaps – after gaining a better understanding of how the decisions are really executed in the field and investigating what factors and sources of information cause various perceptions of risk and benefit, the next step is to exploit these insights to pursue efficiency and effectiveness in the decision making process. This is the goal set by the third research question.

The first and second questions call for an ability to describe real life decision making processes. This could be achieved by constructing clear timelines of how the decision process unfolded and investigating via the interviews what roles management accounting information fulfilled during the decision process. The third question then concentrates on inputs to and instances in the process that affected how decision makers viewed the desirability or riskiness of different options – does some information affect perceptions more than others, and do they create bias rather than clarify the situation in a relevant manner? Finally, after a baseline of how things are has been established, the fourth question seeks to find possible improvements in the process. This can be established through an interventionist approach, where the researcher suggests improvements into the decision process for the case companies and draws insights from their feedback.

In order to simplify the reading experience of the thesis document, the later sections will be presented under “research themes” that relate to each of the three research questions. In this manner, the reader will have an easier time keeping track of the purpose of each section. The themes are assigned as follows:

- Research question 1: Decision making processes
- Research question 2: Role of management accounting information
- Research question 3: Perception of risk and benefit
- Research question 4: Efficiency of decision making

### 3. THEORETICAL BACKGROUND: MANAGEMENT ACCOUNTING AND DECISION MAKING

This chapter aims at building relevant theoretical frameworks and systematic approaches in order to answer the research questions. Section 3.1 concentrates on understanding decision making science, while 3.2 explores management accounting and its usage in decision making. Section 3.3 reflects on risk and benefit assessment, and how individuals attain perceptions of them. Section 3.4 assesses effective decision making in the context of manufacturing relocation decisions. The final section provides a synthesis of how each approach will specifically be applied to answering each research question.

#### 3.1 Decision making processes

Decision making is a very hazy subject, which nevertheless does not fail to rank high in any manager's list of important business skills. Out of a myriad of definitions for decision making, Teale et al. (2002) provide an overview of a few of them, presented in Table 5:

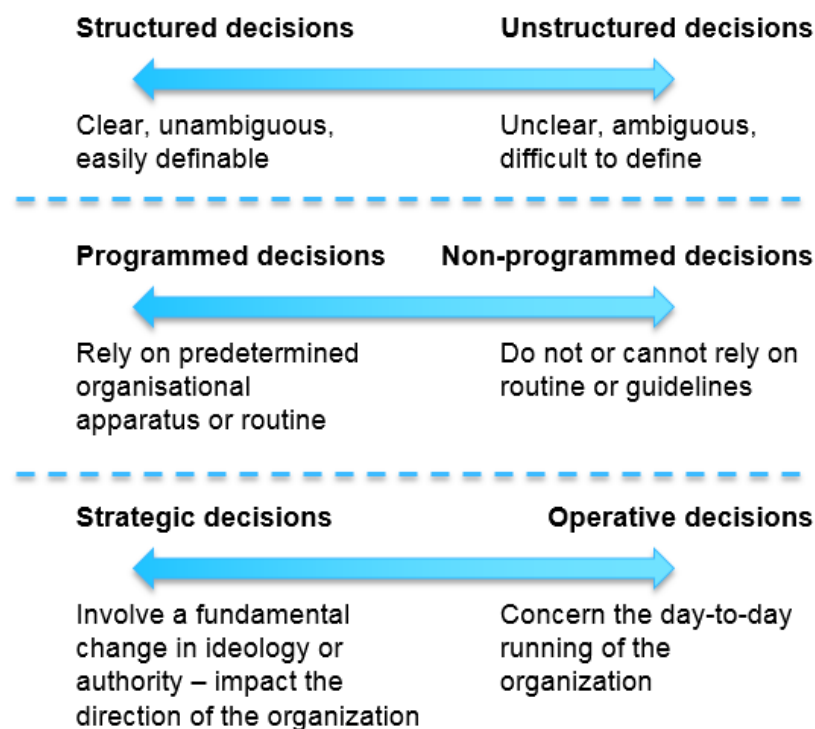
*Table 5: Definitions of decision making (Teale et al. 2002)*

Definition	Original source
Acts of choice between alternative courses of action designed to produce a specified result, and one made on a review of relevant information guided by explicit criteria.	(Rose in Salaman & Thompson 1980: 187)
A conscious and human process, involving both individual and social phenomena, based upon factual and value premises, which includes a choice of one behavioral activity from one or more alternatives with the intention of moving towards some desired state of affairs.	(Shull et al. in Harrison 1999: 4)
A moment, in an ongoing process of evaluating alternatives for meeting an objective, at which expectations about a particular course of action impel the decision-maker to select that course of action most likely to result in attaining the objective.	(Harrison 1999:5)
A commitment to action	(Mintzberg 1983: 188)

According to Mintzberg et al. (1976), when faced with complex situations (such as relocating manufacturing facilities), decision makers try to reduce the decision into smaller subdecisions to which they apply generally known procedures and routines. The most

suitable definition for this thesis is thus the one by Shull et al, as it best reflects the longitudinal nature of a real-life decision making process with its fits and starts, analyses and sub-decisions.

Quite naturally, not all decisions are alike. The decision to hire new production staff or authorizing a standard upgrade to computer software is very different from deciding to move complete production facilities abroad. Teale et al. (2002) continue to suggest a categorization of decisions across three key dimensions: structure, programming and strategic importance. Figure 6 provides an overview of what these dimensions mean:



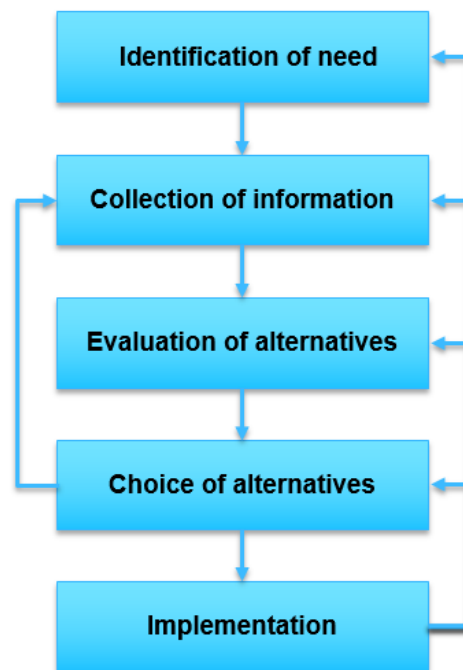
**Figure 5: Categorization of managerial decisions (Teale et al. 2002)**

Reflecting manufacturing location decisions to this categorization, they are by definition more strategic than operative, many times more unstructured than structured and do not involve organizational programming, save for experienced multinationals for whom international growth has been an integral part of their strategy. Mintzberg et al. (1976) described this mix of decision environment attributes as simply strategic decision making, although strategic decisions do not always mean non-programmed and/or unstructured decisions according to Teale et al. Mintzberg et al. further elaborate on strategic decisions as follows:

*“...a strategic decision process is characterized by novelty, complexity and open-endedness, by the fact that the organization usually begins with little understanding of the decision situation it faces or the route to its solution, and only a vague*

*idea of what that solution might be and how it will be evaluated when it is developed.” (Mintzberg et al. 1976)*

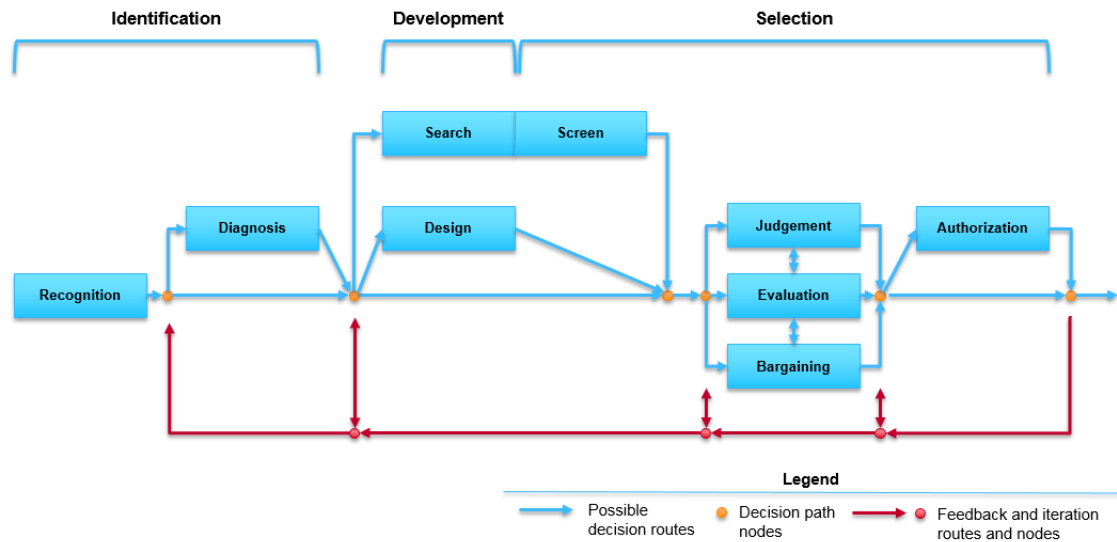
Because these sort of decisions are unstructured, ambiguous, and non-repeating, researchers have limited methods to investigate them with scientific rigor. Still, the literature on decision making has converged on a basic form of how decisions are made. This structure usually includes five main elements: identification of need, creating solution alternatives, evaluating the alternatives, choosing the solution and implementing. Figure 7 visualizes this structure with feedback loops:



***Figure 6: A simple decision making process (adapted from Ekanem 2005)***

This core process has been empirically found to be in line with reality in real organizations, although decision makers usually go through the process in several cycles, fits and starts, sometimes omitting elements and sometimes not (Eisenhardt & Zbaracki 1992). Nonetheless, the framework is a viable starting point to assess and model real decision processes.

Building on this, a decision making framework constructed by Mintzberg et al (1976) targets strategic, ambiguous decisions more directly. They investigated 25 decisions made in high-risk environments, ranging from governmental organizations to corporations and from electronics to the hotel industry. Although all decisions investigated were characterized as unstructured, they all involved some underlying structure that could be modeled. Figure 8 describes a slightly simplified version of their model:



**Figure 7: Strategic decision making process model(adapted from Mintzberg et al 1976)**

The authors describe their framework as follows. The model process begins with a *recognition* of a problem to be solved, or a decision to be made. Triggering stimuli can amount from several external and internal sources, and sometimes they might be accumulated over a period of many years before the formal decision process is initiated. From there, the decision can follow any of the several possible paths along the decision routes.

Recognition is usually followed by a *diagnosis* routine, where the decision makers strive to grasp a hold of the new situation by untapping existing information sources, opening new ones and beginning to define the problem into concrete terms.

Diagnosis ends the *identification* phase, which is followed by a *development* (of solutions to the problem) phase. Here, the decision makers can either *search* for existing solutions or *design* one or more of their own. Searching for a solution might include searching from memory, passively waiting for a solution to present itself, inform “solution agents”, such as suppliers, that a solution is sought after, or actively searching for solutions from various information sources. Designing an in-house solution is a complex, iterative procedure usually involving teams and formal project organizations with a specific responsibility over arriving at a solution.

Once alternatives have been found, the process moves on to *screening* the options, or eliminating those that are not feasible enough for further assessment.

Screened options enter an evaluation/choice-routine. This routine can involve *judgement*, *evaluation* or *bargaining* over the options. Judgement means arriving at conclusions on some personal basis that individuals may not be able to explain. In bargaining the selection is made by a group of decision makers with some degree of conflicting interests. Evaluation means factual analysis followed by either judgment or bargaining.

Finally, the decision makers may be required to seek *authorization* for the selected option internally or externally, after which the formal decision process is over and implementation is begun. (Mintzberg et al. 1976)

All the individual decision processes that Mintzberg et al. investigated followed modified versions of this framework, with some sequences changed, some stages omitted. It can be thus seen that at its core, this model along with the simple decision making process in Figure 7 provide a solid backbone for modeling how the focal decisions in the case companies of this thesis unfolded. On one hand it provides the researcher some structure into formulating interview questions, and on the other hand, implications can be drawn from deviations between the theoretical models and the real process investigated.

A final dimension in studying the decisions is that of decision making groups. To model the dynamics of how information is exchanged and evaluated between decision making group members, the concept of *pragmatic constructivism* is introduced (Nørreklit et al. 2010). Pragmatic constructivism is based on the assumption that four dimensions of reality must be integrated in the actor-world relation, if the construct is to be a successfully utilized in taking action. These dimensions are facts, possibilities, values and communication. The relationships between the dimensions can be described as follows: facts are a necessary basis for action, but insufficient by themselves; without possibilities that are based on facts, there can be no action; possibilities create situations of choice, which must be assessed ultimately with respect to one's values; finally, the integration of facts, possibilities and values must be communicated to enable action in a social setting (Nørreklit et al. 2010). Pragmatic constructivism adds to the mainstream realist paradigm in that it better explains deviations from rationality caused by social phenomena in the human beings making decisions. Based on this model decision making groups do not exchange and process objective, "pure" financial information in order to reach conclusions; instead, they form interpretations of information based on values that might differ between organizations, divisions and individuals. Where some decisions may be made in contradiction to "objective", rational information, pragmatic constructivism posits that those deviations are caused by the differing values and valuations that the realist view does not capture.

Thus, to answer research question 1, the research will include an assessment of how the case decision processes can be modeled in terms of the frameworks in Figure 7 and Figure 8, accompanied by a description of the interaction between decision makers and their choices based on the paradigm of pragmatic constructivism.

### **3.2 Management accounting information in decision making**

In order answer research question number 2, the research needs to dig in to the use of management accounting information, which might be included in any or all sections of the decision making process.

Management accounting (MA) can be defined as the act of gathering, analyzing and reporting information to managers for decision making, planning and controlling resources (Teale et al. 2002). The specific area of MA that relates to offshoring and backshoring decisions is capital investment decisions. The "classic" analysis methods used in capital

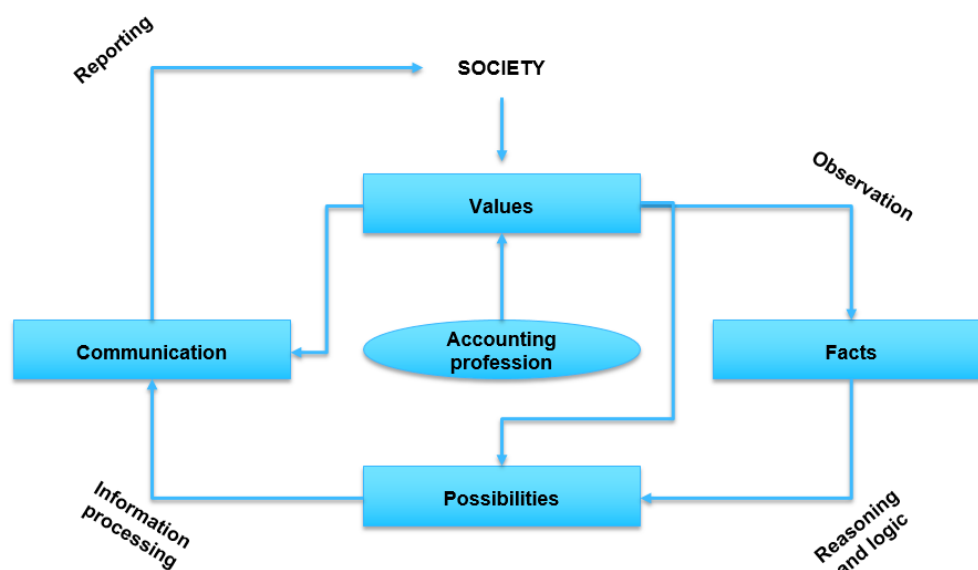
investment decisions involve financial models such as Accounting Rate of Return, Pay-back Period, Net Present Value and Internal Rate of Return (Atrill & McLaney 2012). On another hand, some decisions defy simple financial analysis because they involve issues that are not easily quantifiable (Johnson & Kaplan 1987). This view on MA eventually led to the creation the balanced scorecard and other similar controlling tools to complement the classic investment analysis methods.

From a paradigmatic viewpoint, the common position is that mainstream accounting theory and practice emerge from the paradigm of realism (Ryan et al. 2002). This point of view holds that accounting should represent real world phenomena in numbers (Iijiri 1967), represent them accurately (Sterling 1979) and without distorting the underlying reality (Sidebotham 1970). Thus, if realism is accepted as a paradigmatic base for accounting, it should be viewed as objective, neutral and unbiased (Nørreklit et al. 2010). However, a contradiction could be argued from a social constructivist perspective, which states that there is no objective economic reality on which to base accounting reports (Tinker 1991). Accountants are constantly faced with the need for judgment, estimation and assumptions (Paton 1962), which leads to practice that can hardly remain objective and unbiased. For example, while MA as an activity is usually seen as a rather formal process, or a set of rules, sometimes very informal processes, loosely coupled to the formal processes, ensure that even inefficient accounting practices can survive and be accepted within organizations (Lukka 2007). In this manner accountants and decision makers make constant trade-offs between well-founded, objective analysis and coping with the rushes of everyday business operation in order to have formal duties done on time, if only superficially – meaning basically that managers sometimes willfully abandon rigorous objective analysis in favor of personal needs and objectives that do not connect with best interest of their organization.

In another example, Johnson & Kaplan (1987) argue, that the bureaucratic procedures and cycles of organizations' financial reporting systems lead to a situation where MA information is produced too late, too aggregated and too distorted to be relevant in decision making. Overwhelmed with too much or too little information, especially smaller companies sometimes resort to making investment decisions solely based on “gut feeling” (Atrill & McLaney 2012). Again, the distance between the ideal realist view of accounting and the real world practice is extended.

To impose structure to the view on accounting, the notion of pragmatic constructivism is reintroduced. Nørreklit et al. (2010) specifically addressed the benefits of this paradigm in the realm of managerial accounting with a framework that is visualized in Figure 9:

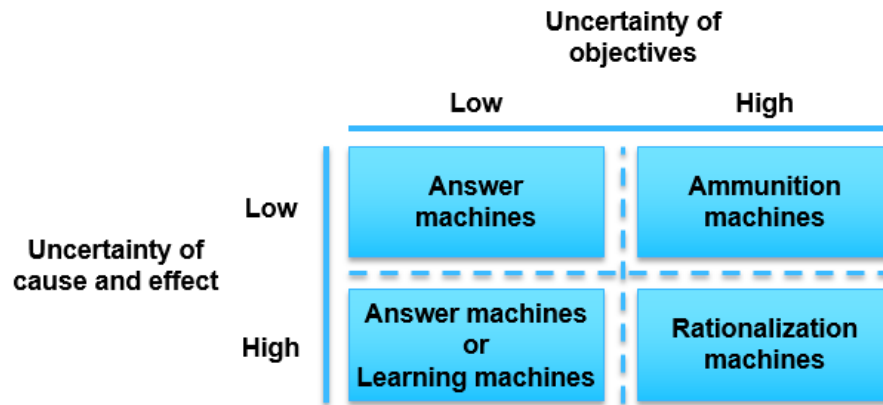




**Figure 8: The integration process of pragmatic constructivism (Nørreklit et al. 2010)**

In simple terms, pragmatic constructivism assumes that accountants create financial information by interpreting and selecting facts based on their values, which results in an understanding of a financial possibility. Selecting which possibilities to pursue is also informed by values. Finally, the possibilities are communicated in reports and otherwise to aid decision making, again influenced by the values that accountants or the collective accounting practice involve.

Pragmatic constructivism extends to explain how accounting can be seen to fulfill not only the role of a rational number churner, but several different roles that emerge from the differing values and information needs of individuals. Where we see unexplainable irrational behavior from the realist viewpoint, such as accepting inefficient accounting practices in organizations, a constructivist would be intrigued to discover what kind of personal and organizational values have guided the behavior to seem so irrational. Burchell et al. (1980) categorized the roles that accounting can take in terms of the uncertainties of the objectives laid for the decision and the cause and effect of the decision, as visualized in Figure 10:Figure 9: Uncertainty, decision making and the roles of accounting practice (Burchell et al. 1980)



**Figure 9: Uncertainty, decision making and the roles of accounting practice (Burchell et al. 1980)**

The authors elaborate on the definitions of each category as follows. *Answer machines* are instances of accounting that give definite or practically definite answers to problems of low uncertainty – an example might include pricing a product profitably in a non-complex organization with a good knowledge of cost structure. When uncertainty over the causes and effects of a decision rises, accounting might be used more as a *learning machine*, or a facilitator of assessment and learning about the environment in which the results of the decision will occur. In a situation where the results of any decision are well known but there is some dispute over what the objectives should be, decision making can grow political qualities, and accounting might be used as an *ammunition machine*, providing proverbial ammunition to support each party's particular position towards the decision. Finally, when there is high uncertainty of both the objectives and the effects of a decision, accounting might arise as a *rationalization machine*, providing justification and legitimization to decisions that have already been decided upon on. (Burchell et al. 1980)

The role of accounting in offshoring and backshoring decisions has already been investigated to some extent. Laine & Suomala (2016) found for example, that companies that have done both offshoring and backshoring perceive their financial information more useful and supportive than those that have done only offshoring. In other words, backshoring decisions are supported by more accurate and relevant financial information. It could be thus assumed that backshoring requires more accurate analyses to actually anticipate and manage the financial consequences of the decision (Gylling et al. 2015; Laine & Suomala 2016). However, utilizing the paradigm of pragmatic constructivism and the accounting role framework by Burchell et al. in case-based research could provide further insight into what exact function MA information serves at various points along real decision making processes in offshoring and backshoring.

To answer research question 2, the research is thus chosen to include both an investigation of what kind of accounting information was used to support decision making, how the interplay between the decision makers eventually created a “demand” for this specific

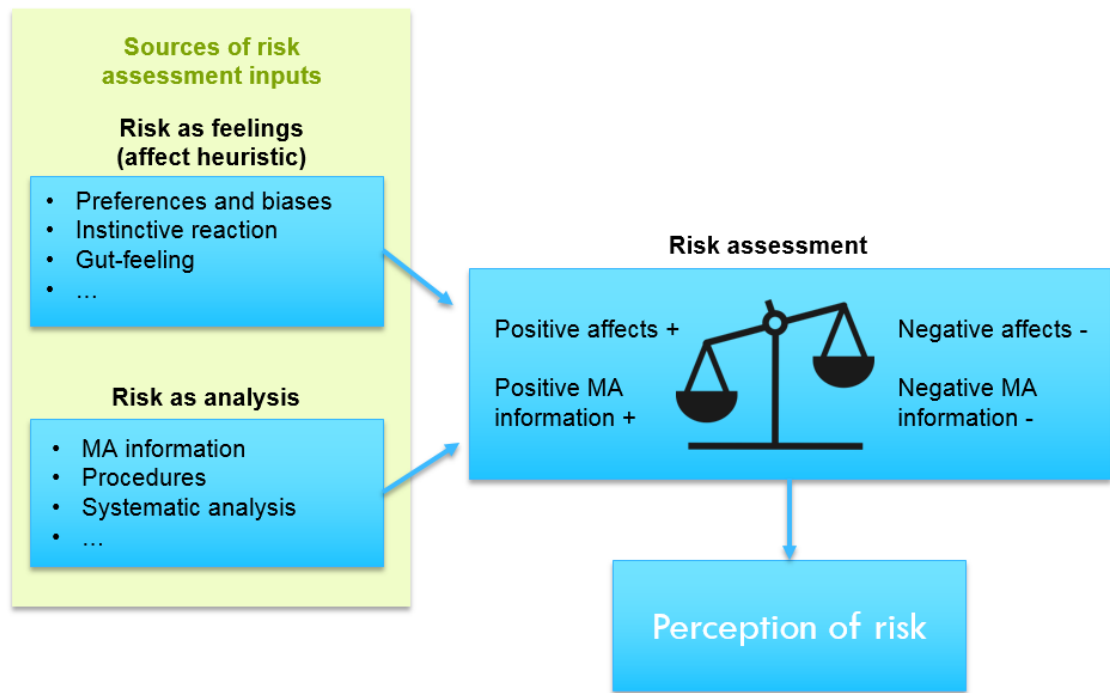
information (in the spirit of pragmatic constructivism), and how could the role of accounting information be described in terms of the framework in Figure 10.

### 3.3 Perception of risk and benefit

Many studies have shown that decision risk, defined as “*the extent to which there is uncertainty about whether potentially significant and/or disappointing outcomes of decisions will be realized*” (Sitkin & Pablo 1992), is not a purely probabilistic, discrete quantity of decision makers. Rather, perception of risk receives input from emotions, biases, prior experience and other such human qualities (e.g. Lerner et al. 2015; Simon 1979; Tversky & Kahneman 1986; Tversky & Kahneman 1974; Ashforth & Mael 1989). The same applies to perceived benefits: personal preference and positive previous experiences about a subject make individuals perceive it as less risky and more beneficial (Sjöberg 2000).

These specific deviations could be described as irrational and unconscious. The paradigm of pragmatic constructivism, which is used as a basis for investigating research questions 1 and 2, could be utilized here as well, but it does not address the question of whether decision makers are conscious of the values that guide fact collection and possibility selection. This means that a complementing theory should be added to account for inputs to risk and benefit perception that individuals are not directly aware of.

To counter this lack in theoretical background, a dichotomy suggested by Slovic et al. (2005) can be considered: *risk as feelings* and *risk as analysis*. Risk as feelings refers to individuals’ fast, instinctive and intuitive reactions to risk. Risk as analysis is closer to what is understood by risk management: logic, reason and scientific deliberation used to analyze risk systematically. Actual *perceptions* of how risky or beneficial economic possibilities are then constructed based on the positivity or negativity of the input that is received from those two ways of reacting to risk. Slovic et al. refer to this emotional input as the *affect heuristic*. Affect is defined as the specific quality of goodness or badness either a) experienced as a feeling state (with or without consciousness) or b) demarcating a positive or negative quality of a stimulus. Effectively, affects are a pool of markers attachable to any idea that cause the idea to be experienced as high or low in risk. Using a readily available affect to quickly make decisions will many times feel more efficient than carefully analyzing options and their pros and cons (Slovic et al. 2005). The affect heuristic can thus make risk assessment objectively less reliable in complex situations. For example, witnessing an airplane crash landing certainly acts negatively on a person’s risk perception of flying, regardless of its true riskiness. Figure 11 describes this framework visually:



**Figure 10: Generation of risk perception (partially adapted from Slovic et al. 2005)**

Here, individual decision makers react to a need to assess a risk by drawing inputs from both the risk as feelings and risk as analysis paths. Risk as feelings encompasses all the irrational and especially sub-conscious arguments towards the goodness or badness of a choice, while risk as analysis covers the inputs that come from the objective realm, including systematic analyses, checklists and procedures. MA information is here considered to belong to the objective realm, because its usage more or less requires conscious consideration regardless of what role it has taken in terms of the framework presented in section 3.2 in Figure 10. These inputs are then added together and weighed against each other: on one hand the positive affect heuristics from the risk as feelings source and positive information from the risk as analysis source, on the other hand negative affect heuristics and negative information. This assessment finally results in a perception of the risk of a possibility being of some level.

This framework will be utilized in the research to analyze the extent to which individual sub-decisions, such as considering individual location candidates, along the general decision making process were justified in terms of risk as feelings and risk as analysis.

### 3.4 Effective decision making

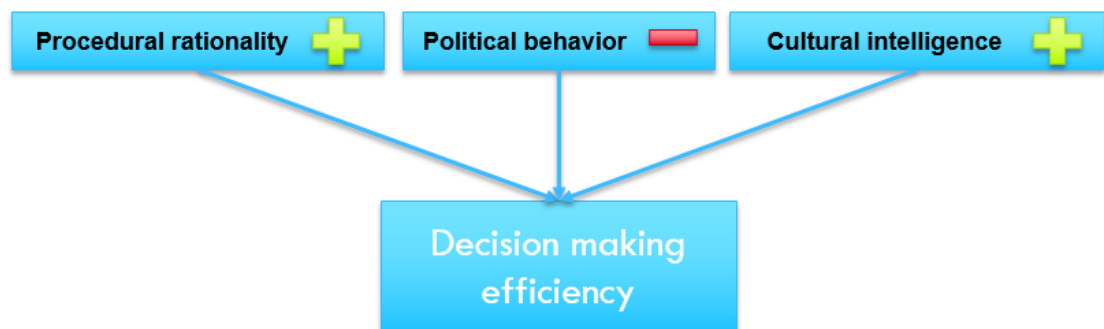
The fourth and final research question asks how organizations could make more informed and effective manufacturing location decisions. This calls for an unambiguous definition of decision making “effectiveness”. Dean Jr and Sharfman (1996) define strategic decision effectiveness as “*the extent to which a decision achieves the objectives established*

by management at the time it is made”. This is probably the simplest unambiguous manner of measuring the quality of decisions. Decision making effectiveness is thus dependent on both setting achievable targets and managing resources in a manner that the targets are achieved.

In their article, Dean Jr and Sharfman (1996) showed empirically that two major factors have a strong influence on this effectiveness: procedural rationality and political behavior. Procedural rationality, defined as “*the extent to which the decision process involves the collection of information relevant to the decision and the reliance upon analysis of this information in making the choice*” was found to have a positive effect on decision quality (Dean Jr & Sharfman 1993 in Dean Jr & Sharfman 1996). Simplified, this would mean that decision makers that follow set procedures, use accurate MA information and reduce the risk of falsely trusting affect heuristics increase their probability of meeting the objectives of offshoring decisions. On the other hand, political behavior, defined as “*intentional acts of influence to enhance or protect the self-interest of individuals or groups*” (Allen et al. 1979 in Dean Jr & Sharfman 1996), was conversely found to negatively affect strategic decision effectiveness. Political behavior seems to arise from differing interests that result from functional, hierarchical, professional and personal factors.

One further separate factor will be taken into account in measuring decision effectiveness: cultural intelligence. Cultural intelligence is defined as “*an individual’s capability to function and manage effectively in culturally diverse settings*” (Ang & Inkpen 2008), and is argued to be critically important for companies to successfully leverage international ventures such as offshoring.

Figure 12 presents these factors in a simple framework:



**Figure 11: Framework for investigating decision effectiveness (Dean Jr & Sharfman 1996)**

As can be seen, each factor has a positive or negative effect on decision making efficiency, or the probability that objectives set for the decision are met. However, to make sure that the framework is of practical usefulness when conducting the research, the factors should be opened into their components, which can then be identified in the case decision processes. This is clarified in Table 6:

**Table 6: Components of the factors affecting offshoring decision making efficiency**

Factor	Components
Procedural rationality	Utilizing MA information, using set procedures and frameworks to guide decision making, recognizing and fact-checking affect heuristics
Political behavior	Distortion or restriction of information flow, diverting decision making to serve personal interests
Cultural intelligence	Previous experience of target countries, education, involving natives in the decision making process

These traits will be sought after in the research to determine whether the case decisions were made from a solid platform of rigorous decision making, or whether they were conducted in a manner that on average would set them on a course for difficulties in the relocation project. In addition, specific points of possible improvement in the decision process will be explored, in the vein of the question “if you had a chance to go through the decision process again, what would you do otherwise?”

### 3.5 Research framework

The research framework is a systematic approach to clearly and concisely answer all the research questions:

1. How can offshoring and backshoring decisions be modeled?
2. What is the role of managerial accounting information in them?
3. What factors influence decision makers’ assessments of risks and benefits in these decisions?
4. How could companies make more effective offshoring and backshoring decisions?

In order to answer questions number 1 and 2, a comprehensive description of the case decisions will be constructed based on interviews, with a focus on what triggered the decision process, what people and functions were involved in it, what information was utilized and what was the role of management accounting information in it. The frameworks in Figures 7 and 8 will be utilized to construct a clear process timeline of how the decisions unfolded, while the frameworks in Figures 9 and 10 will aid in laying structure on what the role of accounting information actually was.

In order to answer question number 3, the interviews will be designed to encourage interviewees to describe the inputs into important sub-decisions along the major decision process in as much detail as possible. These inputs will be categorized based on the risk as

feelings vs risk as analysis framework in Figure 11, making it possible to determine what exact factors had an effect on how risky or beneficial individual decision makers thought various location options were along the decision process.

Finally, in order to answer question number 4, the described case decision process will be examined to see how much of the decision making involved procedural rationality, whether the irrational inputs positively or negatively affected the decision effectiveness, and whether there was any evidence of political behavior. An intervention will be constructed, where improvement suggestions are offered to the interviewees. They are asked to comment on the intervention, providing validation of whether they perceive the suggestions as improving their decision making processes or not.

## 4. RESEARCH STRATEGY

This chapter describes choices made regarding research strategy and the timeline of execution. Section 4.1 presents the chosen research strategy and a methodology-based rationale for choosing it. Section 4.2 presents the chosen data gathering methods, including an assessment of their strengths and weaknesses. Section 4.3 describes the measures taken to ensure the validity, reliability and generalizability of results. The fourth and final section presents the schedule and timeline on which the research was conducted.

### 4.1 Methodology choices

The chosen research strategy can be described as a qualitative case study with semi-structured interviews as the main data gathering method (Saunders et al. 2009; Hutchinson & Skodol-Wilson 1992). In order to locate this specific strategy in the general framework of business research, a brief background is provided next.

Business research can roughly be divided into two main categories: qualitative and quantitative research. Qualitative research methods can include case studies, field studies, grounded theory, document studies, naturalistic inquiry, observational studies, interview studies and descriptive studies. On the other hand, quantitative methods include empirical studies and/or statistical studies. (Newman & Benz 1998) A qualitative approach is suitable for the needs of this study, since qualitative research is concerned with providing answers to questions such as (Hancock et al. 2009):

- Why people behave the way they do
- How opinions and attitudes are formed
- How people are affected by the events that go around them
- How and why cultures and practices have developed the way they have

Qualitative case study was chosen as the overarching research method for two main reasons. Firstly, decision making processes in offshoring and backshoring decisions are a highly specific subject for which very little publicly available material exists. Actively connecting with decision makers in interviews and conversations is needed, since even board meeting minutes rarely capture the all the details of decision making. Secondly, it is very hard to quantify aspects relating to decision making processes, especially when it comes to such abstract concepts as *perception* of risks and benefits.

As per a basic research paradigm, the thesis assumes an interpretivist position to explain managers' decision making behavior. Interpretivism argues that it is necessary for the researcher to understand the social roles of individuals in everyday life and business. In order to achieve this, the researcher has to adopt an empathetic stance, entering the social



world of the research subjects and occupying their points of view (Saunders et al. 2009). This paradigmatic position lends itself to most conveniently and effectively explain the phenomena that are investigated through interviews, as the data consisted of largely the personal accounts and interpretations of individual interviewees about how the focal decision making process unfolded in their company.

## 4.2 Data gathering methods

One of the most important decisions regarding case study research is choosing suitable data gathering methods. The possible methods can be categorized as follows (Gummesson 1993):

- Using existing material
- Questionnaires and surveys
- Interviews
- Observation
- Action research

Firstly, using existing material to conduct research allows for completely non-obtrusive means of generating and analyzing data. Possible sources of data include previous literature, press releases, publicly available profit and loss statements and data provided by third parties.

Second, questionnaires and surveys involve standardized sets of questions. They are usually constructed in a way that allows for some degree of quantitative analysis of the resulting data.

Third, interviews are a less structured means of gathering data, usually take more time and allow for little quantitative analysis. On the other hand, interviews usually enable deeper connections to the information source and thus deeper understanding of the investigated phenomena.

Fourth, observation as a research method can be roughly divided into two: non-interactive and interactive. Non-interactive observation includes simply observing the investigated phenomenon with a minimum amount of actual interaction or obstruction of normal activities. Interactive observation on the other hand might include very heavy interaction, but also allows for a deeper viewpoint into the phenomenon.

Finally, action research is a method that includes direct involvement from the researcher, which then can have a manipulative effect on phenomenon investigated. (Gummesson 1993.)

The main data gathering methods in this study included semi-structured interviews and an intervention towards the end of the study process. A multiple method strategy was chosen, because it provides a chance to first get a feel for key issues and be guided into concentrating on the most valuable aspects of the research, and then use other, more focused methods to hone in on those key aspects in order to answer the research questions (Saunders et al. 2009).

### **4.2.1 Semi-structured interviews**

A semi-structured interview can be defined as a purposeful conversation, in which the researcher will have a list of themes and questions to be covered, although they might differ from interview to interview. Some questions might be omitted in some interviews, while in others new and appropriate questions might be added ad hoc. (Saunders et al. 2009)

Semi-structured interviews also allow the interviewer to employ clarifying secondary questions, or probes (Hutchinson & Skodol-Wilson 1992; Saunders et al. 2009). Probing can be a valuable method of ensuring the validity of data gathered through interviews, due to the following reasons (list first presented in Barriball & While 1994):

- Probing allows for the clarification of interesting and relevant issues raised by the interviewees (Hutchinson & Skodol-Wilson 1992)
- Probing provides opportunities to explore sensitive issues (Nay-Brock 1984; Treece & Treece 1986)
- Probing can elicit valuable and complete information (Gordon 1975; Austin 1981; Bailey 1987)
- Probing enables the interviewer to explore and clarify inconsistencies within respondents' accounts
- Probing can help respondents recall information for questions involving memory (Smith 1992)

Saunders et al. (2009) list several situations where using qualitative, semi-structured interviews can be advantageous. These situations can be grouped and explained as follows (Saunders et al. 2009):

- The purpose of the research
- The significance of establishing personal contact
- The nature of the data collection questions
- Length of time required and completeness of the process

Firstly, semi-structured interviews are a likely part of a research design when the research involves an exploratory or an explanatory aspect (Saunders et al. 2009). The research

questions of this thesis relate to a relatively little studied subject, and there is an explanatory aspect present in that the thesis attempts to explain causal relationships between risk and benefit perceptions and their causes.

Secondly, managers are more likely to agree to be interviewed in person than to fill in questionnaires. In addition, interviews allow the researcher provide the interviewees further assurance of how the collected data will be used.

Thirdly, an interview will be the most advantageous option especially when the questions are either complex or open-ended, or when the order and logic of questioning may need to be varied (Saunders et al. 2009). This is definitely the case in this thesis, as even the order in which different decision makers are interviewed might have an effect in what data ends up being gathered.

Finally, conducting interviews gives the respondent manager more control over how much time they devote to the data gathering process, compared to filling surveys. This is another aspect that makes them on average more willing to agree to be interviewed (Saunders et al. 2009).

### 4.2.2 Interventions

Interventionist research is a close relative of action research and case studies. According to Jönsson and Lukka (2005) interventionist research should be seen as a sub-category of case studies, that consists of a group of several different data gathering methods. In interventionist research, the researcher actively contributes to problem solving and developing the targeted organization. This hands-on approach is then used to build theoretical knowledge, which separates this type of research from consulting (Lukka & Jönsson 2005).

Active participation is simultaneously considered a strength and a challenge of interventionist research (Lukka 2000; Argyris et al. 1985). In it, the researcher engages in a type of experimental research set in a practical environment, trying to find and create settings that are relevant to the research questions. This provides good chances to capture profound scientific insights that are also useful and practical to managers. In addition, the phenomena investigated usually take place very near the observer, since it is the researcher that in part initiates them (Lukka & Jönsson 2005). On the other hand, the researcher cannot completely control the research settings, but has to react to changes taking place in the organization (Saunders et al. 2009).

What specifies interventionist research as its own branch of action research is the intervention. In non-interventionist action research the researcher primarily acts as an observer, even though he/she is contributing to problem solving in the organization, whereas in interventionist research the researcher acts as an active facilitator of change, trying to exert an influence on the organization under observation (Suomala & Lyly-Yrjänäinen 2012). This induced change then is the phenomenon of interest to the researcher.

In this research, the researcher tried to position himself as a half-academic, half-consultant, acting both as a gatherer of information as well as provider of tailored knowledge that might create real value through improved decision making processes for the case companies. Assuming such a position helped in establishing a relationship with the interviewees, as some of them explicitly became more interested in the subject after hearing they were going to see the results of the research with a focus on developing their own organization.

## 4.3 Weaknesses of the research strategy

Reliability, validity generalizability are measures of the trustworthiness, rigor and quality of research (Golafshani 2003). Validity refers to being able to provide evidence that the object or phenomenon of interest was actually the one measured. Reliability means that the measurement methods should be able to produce the same results in the same conditions repeatedly. Generalizability refers to being able to infer results from a specific case to apply to a population. (Stenbacka 2001)

In order to ensure that all three of these are preserved to the greatest extent, weaknesses of the research strategy were identified by consulting literature on qualitative research, semi-structured interviews and interventions. The identified weaknesses are presented in Table 7:

*Table 7: Identified weaknesses of the research strategy*

Category	Weaknesses
<b>Validity</b>	<ul style="list-style-type: none"> <li>• The comments, tone or non-verbal behavior of the interviewer can lead to a bias in how the respondent answers questions (Saunders et al. 2009)</li> <li>• Qualitative research rarely succeeds in isolating the variable of interest from other variables (distinguishing the signal from the noise) (Hancock et al. 2009)</li> <li>• Validity of qualitative research cannot be determined objectively (Gabriel 1990)</li> </ul>
<b>Reliability</b>	<ul style="list-style-type: none"> <li>• Since qualitative research concerns ever-changing humans, organizations and societies, there is no objectively reliable measurement method (Golafshani 2003)</li> </ul>
<b>Generalizability</b>	<ul style="list-style-type: none"> <li>• Results may not be generalizable to a larger population due to a small sample size and that the participants were not chosen randomly (Hancock et al. 2009)</li> </ul>

These vulnerabilities were kept in mind throughout the research process, and mitigation efforts to reduce their prevalence were taken. The exact means of how the weaknesses were addressed will be examined in section 6.3: Limitations.

#### 4.4 Research schedule

The research was mainly conducted over the period of April – September 2016. The first month was spent mostly getting acquainted with the subject and building a theoretical starting point for the investigation. Interviewees for the study were selected based on their involvement or knowledge of the relocation decision in question. The interviews took place all over the summer. A summary of all interviews conducted is presented in Table 8:

*Table 8: Summary of conducted interviews*

Interviewee identification	Position in company at the time of decision / role in decision process	Duration of interview
<b>CompanyA_Person1</b>	Business development manager / core decision team member	65 minutes
<b>CompanyA_Person2</b>	Business controller / core decision team member	50 minutes
<b>CompanyA_Person3</b>	Project manager for implementing decision	55 minutes
<b>CompanyA_Person4</b>	Sourcing manager, Asia / no direct involvement in decision process	30 minutes
<b>CompanyB_Person1</b>	CFO / no direct involvement in decision process	50 minutes
<b>CompanyB_Person2</b>	VP of HR / no direct involvement in decision process	55 minutes
<b>CompanyB_Person3</b>	Supply chain manager / project manager for implementing decision	45 minutes
<b>CompanyC_Person1</b>	COO / primus motor of decision process	50 minutes
<b>CompanyC_Person2</b>	Business development manager / significant contributor to decision process	40 minutes

Case company A is a medium-size Finnish family-owned and run company manufacturing components for heavy industry. Their headquarters and main production facility has been situated in its current location in Finland since the 1970's. They have recently started a production facility in Eastern Europe, in a country identified as country AX. This offshoring decision is also the case of interest for case company A. It should be noted that this decision was not an offshoring case as such, but a foreign investment in a manufacturing facility. However, this was seen as a suitable proxy for a pure offshoring decision, since one of the options of locating a new facility could have been Finland as well.

Case company B is a large Finnish company, also family owned, manufacturing ventilation products and systems for industrial customers. Founded in the late 1960's, their revenue has grown to roughly 200 million in 2015. They have a presence on three continents and thirty countries. This case focuses on a recent decision to move production from an Eastern European country identified as Country BX to Finland.

Case company C is a young, medium-size Finnish company that provides industrial lighting solutions. Their production and operation is currently completely domestic, following a backshoring decision to pull production back to Finland from Asia, from a country identified as Country CX.

The interviews were conducted mainly via phone or meeting software, apart from the interview with CompanyA\_Person3, which was done face-to-face at the Company A's premises. Meticulous notes were made from each interview, excluding the face-to-face interview which was audio-recorded. All interviewees were first asked to state their history in the company, as well as their role in the focal decision process. The rest of the interview depended on how many people from the same company had already been interviewed. It was seen as beneficial to interview each person individually versus as a group. This allowed for the possibility of differing views and opinions emerging, without the influence of other decision team members in the room. The story behind each decision could also thus be verified through several individual and independent accounts.

The selected interviewees turned out to be very informative and fitting for the questions asked, as some form of saturation could be noticed even in Company C, from which only two people were interviewed. That is to say, the stories from each interviewee more or less supported the stories of other interviewees from the same company. This was seen as a signal that the true course of events was accessed and recorded.

Arranging the interviews was somewhat challenging due to interviewees' schedule restraints, but all of them could be executed over the summer. The last interview was conducted in the middle of August. Once all data was gathered, it was categorized per research question and analyzed using the frameworks as specified in section 3.4. After this, the preliminary results of the research were sent for review to the interviewees, who were asked to comment on their accuracy and especially on the validity of the recommendations for improving the efficiency of decision making. The research was concluded by integrating those comments to the research document and doing a final revision of the whole project and thesis document.

## 5. RESULTS AND ANALYSIS

This chapter summarizes the results gathered from the case companies and analyzes them with respect to the theoretical frameworks presented in chapter 3.5. The first three sections of this chapter present and analyze the findings from case companies A, B and C, respectively. The final section builds a synthesis from all three cases in order to draw relevant higher level insights for the research objectives.

### 5.1 Findings from case company A

#### 5.1.1 Description of case decision process

Company A's decision process to offshore production from Finland to Country AX in Eastern Europe took place over a roughly 3-year period from the first considerations of international expansion in late 2000's to founding a subsidiary to the targeted country in the early 2010's. The decision was made mainly by an informal project group of three decision makers, one of whom was the then CEO of the company. A formal project organization was established only after the final location decision was made and the building of a production facility was starting. The rest of the executive board intermittently contributed to decision making during the 3-year period.

There were no formally set objectives for the decision, although from the very beginning there was a general consensus that the goal of the project team was to find a brownfield investment (purchasing an existing manufacturing facility from their current owners) somewhere in Eastern Europe, in which the production of high volume – low mix components was less costly than in Finland. Conversely, the idea was to retain the manufacturing of tailored, low volume – high mix products in the company's factory in Finland, where their production was still considered more beneficial when all aspects like flexibility and closeness to R&D were taken into account.

The interviewees agreed that there was no single factor that triggered the decision to locate the new factory abroad. Instead, many factors from different sources were filtered and condensed into a formal initiative to move forward with an internationalization effort. The primus motor of this initiative was the executive responsible for business development in the company. Some of the most important factors that contributed to triggering the decision included:

- The company's strategic choice to pursue growth, combined with the fact that they already had market leadership and little room to grow further within Finland
- Requests and ideas from customers to locate facilities nearer to them



- Preliminary investigations by the company's sourcing team on cheaper components to be manufactured in or sourced from Eastern Europe
- Cost pressure from Central European customers on high volume – low mix products, caused mainly by high labor costs in Finland

CompanyA\_Person1, the then business development manager, emphasized in his interview that the most important factor of these was not cost pressure, but the company's willingness to grow and develop itself. Thus, this case is not directly representative of the average manufacturing location decision, which is mainly driven by the pursuit of lower costs. On the other hand, once the company had decided to pursue growth internationally, cost pressure was the factor that had most impact on what kind of growth was reasonable for the decision makers. Therefore, the decision to locate production abroad was motivated by strategy, while the choice of location was strongly influenced by cost considerations.

No-one in the decision making team had previous experience of making foreign direct investment (FDI) decisions, apart from possible simulations in their business education. This meant that the decision process was marked by a lack of pre-set structure, learning by doing and utilizing ad hoc methods to move forward. As a starting point, the team used a generic FDI decision framework as a checklist when analyzing possible countries to invest in. The team acknowledged at an early stage, however, that their lack of experience created a need for external experts, and thus they decided to seek support from FinPro, a state-owned company whose purpose is to facilitate Finnish exports. FinPro was able to provide the case company information about countries' business environment, culture and other aspects. Other sources of information, like contacts and various internet resources were utilized as well.

Once the available sources of information were exhausted and a couple of countries had been shortlisted, the team decided to target prospect brownfield-sites and do personal visits to them. During the second year of the decision process, several separate visits were made to three different East-European countries. The sites worth visiting were mainly proposed to the company by FinPro, and were chosen based on their distance to Central European customers and available cost/profit information.

The site visits formed to be a very interesting part of the decision process, from both the viewpoints of the decision making team and the researcher. The backbone of the investigations that the team made into each location were quantitative data about the facility's operation and financials, including accounting simulations with an imagined production line operating at the location. However, all three interviewees that had taken part in the decision directly mentioned, that the critical aspects that determined whether a location was considered good or not turned out to be very qualitative attributes. These attributes

included for example how easy it was to communicate with the site managers, how efficient and suitable the manufacturing process looked like, and what kind of an overall feeling the visit left on the decision makers. As CompanyA\_Person2 put it,

*“...it was the feelings and understanding that emerged during negotiations that had the biggest role in those last moments of the location decisions”.*

At a point where some of these visits had already been made, Country AX emerged as the chosen country for the manufacturing location, meaning that further locations investigated would only be considered from Country AX. The main reasons for choosing Country AX over other countries were

- Cost level
- General level of skill and education compared to cost level
- Geographical location next to Central Europe
- Presence of a large potential customer, with whom the company had previous relations with
- Political stability
- Lack of corruption compared to other East-European countries considered
- Country AX itself formed an interesting market for the company, especially for their services department

At this stage, brownfield investments were still the preferred investment strategy, but it started to seem that greenfield (building a facility from ground up) could in fact prove much easier to implement overall, as the decision makers were not content with any existing facility visited. Several locations in Country AX were researched, and as the list of potential sites reduced in size, the amount of analysis and accounting simulations increased. The team utilized two main methods to compare sites in Country AX. First, there were budgeting simulations on existing products that were currently produced in Finland, based on cost information provided by the sites. Second, there were budgeting simulations based on P&L statements of local competitor companies, to give a rough estimate of what kind of margins producing in Country AX might achieve.

In the end, the chosen location was pinpointed at a Special Economic Zone business park. The main reasons to choose this specific location were listed as follows:

- Abundant skilled labor due to similar industries' heavy presence in the area
- Good language skills
- Very good logistical location with respect to central Europe
- Very near to potential large customer
- Reasonable labor cost (not the cheapest, nor the most expensive of considered options)

The critical of these aspects turned out to be the proximity to a highly potential large customer, a Finland-based OEM, with which company A had had some business earlier in Finland. They were also valuable to the decision makers in that they provided plenty of information about the business park and local environment based on their own experience.

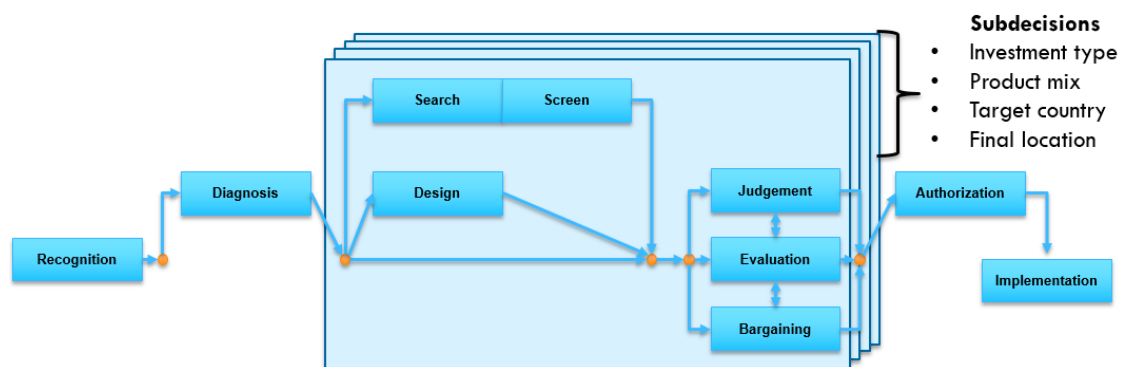
The consideration that required the most discussion and internal dialogue with the decision making team was that of what to produce in Country AX. The general idea had been clear from the start: high volume – low mix, or bulk products were to be produced there while more tailoring-oriented products would remain in Finland, but the specific mix of products was a subject for a lot of debate and analysis.

Building the plant was begun roughly 6 months after the final decision was made. At this point the team decided to hire a Country AX native to lead the project. This decision was made to minimize the hindrances and costs related to navigating the regulatory formalities of operating in Country AX.

In hindsight, the decision making team viewed the whole process as a success. No major drawbacks were encountered. The few significant problems faced and solved included a delay by a supplier of production machines to the offshored facility and spending too much time on weighing options to resolve an issue about how to organize an important production subprocess in the new location. Currently the facility is doing well and the managerial team is pleased with its performance.

### 5.1.2 Analysis of the decision process

To impose structure to the decision process, the frameworks presented in Figure 7 and 8 of section 3.1 are utilized to construct a descriptive model, presented in Figure 13. It was found that the most reasonable approach is to simplify the overall process into a straightforward step-by-step process which includes nests of complex sub-decisions:



*Figure 12: A descriptive model of the decision process in case company A (feedback loops excluded)*

The process started by recognizing the need to consider a foreign manufacturing investment. Next, diagnostic preliminary investigations were conducted by the company's business development manager. As an explicit commitment to invest abroad was made, the process entered a phase that included the identified key sub-decisions. Each can be described to have had their own decision process with information gathering, evaluation and choosing a solution. However, no discrete sequence could be identified between the sub-decisions: while some decisions were made prior to others, the decision makers pointed out that several sub-decisions were considered simultaneously and that in fact many options were kept open until very late in choosing the final location. Only once all the sub-decisions had been made could the team continue to initiate implementation.

The four sub-decisions (investment type, what to produce, target country and final location) followed varying decision paths in terms of the strategic decision process model in Figure 8, depending on the type of decision. First, investing in an existing facility was initially considered to be practically a given, as having to supervise a construction project from square one was seen as a burden best avoided. However, as the team accrued knowledge of location candidates and especially as they visited locations personally, they eventually reached the conclusion that the best way to ensure a standard of quality and reasonable control of immediate infrastructure around the facility was to invest in a green-field facility.

Second, the choice of what to produce was probably the most complex of all four. The interviews did not uncover specifics about the analyses and debates that were included, but it was clear that several different investment calculations were drafted to support differing opinions within the decision making group.

Third, the choice of target country followed a rather straightforward path of first gathering information about possible options, then evaluating alternatives both qualitatively and quantitatively, and concluding in locking the target country into Country AX once no promising location candidates were found elsewhere.

Fourth, the choice of final location was basically an extension of finding a target country. (They are modeled as separate sub-decisions since they could be processed as completely separate entities, first selecting the country based on nation-level information and then selecting the final location based on individual location-level information.) Several location candidates were identified with the help of FinPro and its counter-part in Country AX. This longlist was shortened by both quantitative means and by personally visiting sites, until certain factors dictated that the optimal location in this case was in western Country AX.

As a summary, Table 9 describes the decision making paths for each sub-decision:

**Table 9: Company A's subdecisions' decision paths, analyzed with the strategic decision process model in Figure 8**

Sub-decision	Decision path
<b>Investment type</b>	Search (lock intent to invest in brownfield) → Evaluation (by location visits) → Decision made (Switch to greenfield)
<b>Selecting target country</b>	Search (information from FinPro and other sources) → Screen → Evaluation (with significant input from location visits) → Decision made
<b>Selecting what to produce</b>	Design (several suggestions from decision making team members) → Evaluation / Judgement / Bargaining (internal negotiations about best alternative, accounting simulations) → Decision made
<b>Selecting final location</b>	Search → Screen → Evaluation / Judgement (input from selecting target country and location visits) → Decision made

The main observation here is that when the overall offshoring decision process is broken down into its components, several differing decision making paths emerge with differing objectives and complex process dependencies. For example, the objective of deciding on an investment type is to find a solution that balances economic feasibility and man-hours needed to supervise the investment, while the objective of deciding on what to produce is to find a mix of products that makes most sense given certain market conditions, and so on. Due to this complexity it became impossible to create a clear description of how each sub-decision evolved in time with respect to other sub-decisions.

On the other hand, the fact remains that for example the chosen investment type does not affect directly the choice of product mix. Therefore, there is room to speculate whether a more optimal sequence of sub-decisions could be devised. This view was confirmed by CompanyA\_Person3, who stated that there could have been more systematicity and a more sequential approach to the sub-decisions:

*An FDI-process does not have to involve that much meandering and iteration. There are definitely some decisions that could have been sequenced and gotten over with in an early stage.*

Remembering Dean & Sharfman's (1996) definition of decision making effectiveness, "the extent to which a decision achieves the objectives established by management at the

*time it is made*” it can be argued that the overall effectiveness of an offshoring decision can depend on how well the decision maker is able to understand not only the objective of the grand objective of the whole offshoring project, but the objectives of each sub-decision and their process dependencies.

### 5.1.3 Role of MA information

The role of MA information was also most reasonable to analyze in terms of the sub-decisions. Based on the interviews, the role of MA information varied significantly between the sub-decisions, as presented in table 10:

*Table 10: Roles of MA information in Company A's sub-decisions*

Sub-decision	Role of MA information
<b>Investment type</b>	N/A – Answer machine
<b>Selecting target country</b>	Learning machine
<b>Selecting what to produce</b>	Answer machine / Learning machine / ammunition machine
<b>Selecting final location</b>	Learning machine

As can be seen, the role of accounting information as well varies between subdecisions. On one hand, the initial commitment to search for a brownfield investment was made completely based on gut-feeling, while in a later stage some calculations were needed relating to financing the newly chosen greenfield investment. On the other hand, the product mix decision necessitated calculations that gave clear answers about what are the boundary conditions for the products to be produced, calculations that informed the decision makers about the economic reality of the location candidates’ production cost structure, and calculations that acted as arguments in the internal discussions.

Examples of the types of calculations and MA information used include:

- Simulations on different product lines
- Budgeting scenarios including logistics, machine costs, raw materials
- Simulations based on local competitors’ P&L statements
- Economic and location specific data from FinPro / other sources

In general, the whole process required a great amount of MA information for varying purposes and roles. However, the interviewees stated that uncertainty was still a great concern, meaning that while MA information was abundant, it was rarely accurate enough

to fully support informed decision making. This is most probably due to decision makers having to deal with e.g. facilities whose accounting practices they do not know, or practices that are deficient in some respect.

#### 5.1.4 Risk and benefit perception

The decision making team based their risk management efforts on the aforementioned FDI framework. Figure 14 presents this framework at a high level.

##### Factors to consider in FDI

- Market factors
- Political factors
- Human resource factors
- Infrastructural factors
- Profit retention factors
- Economic factors
- Legal factors

*Figure 13: FDI factors to consider – framework used by case company A*

However, CompanyA\_Person1 stated that in the end the risks that were analyzed in detail were picked more or less ad hoc, or based on “what came to mind”. This lack of structure has later been replaced with a new systematic risk assessment routine.

The interviewees agreed that the most important risks that were discussed in the board room were demand risk (is there enough demand for the offshored facility?), financial risk (will there be sufficient funding for the investment?) and legal risks (will there be significant difficulties due to bureaucracy?). To analyze perceptions further, the decision was again divided into sub-decisions, as presented in Table 11. A “N/A” entry means in this case that the interviews did not uncover signs of risk perceptions being based on a particular source

*Table 11: Risk perceptions in Company A's sub-decisions*

Sub-decision	Risk perception sources
<b>Investment type</b>	RISK AS ANALYSIS: Scenario calculations RISK AS FEELINGS: Previous experience of large-scale investments extrapolated to offshoring decisions
<b>Selecting target country</b>	RISK AS ANALYSIS: Information from FinPro and Invest Poland RISK AS FEELINGS: N/A
<b>Selecting what to produce</b>	RISK AS ANALYSIS: Scenario calculations, RISK AS FEELINGS: N/A
<b>Selecting final location</b>	RISK AS ANALYSIS: Profit/loss scenarios, MA information from brownfield-candidates RISK AS FEELINGS: Ease of communication with brownfield-candidate management, the looks of candidate's production process, the looks of candidate's immediate location

The major conclusion about risk perceptions is that the whole decision process mainly relied on thorough analysis methods and usage of numbers rather than feelings to support decisions. However, it cannot be denied that feelings and ad hoc assessments had a significant role to play. This was especially true when choosing between final location candidates. A particularly interesting observation was the fact that while the actual final decision was chosen most importantly due to the proximity of the large customer, individual locations were ruled out in the end based on a feeling that the location visits induced in the decision makers' minds. CompanyA\_Person4, who was not a participant in the decision process, stated that this feeling is most probably based on how smoothly the visit went, how easy it was to communicate with the local personnel, how tidy the location looked like and so on. He based this comment on his own experience of working several years in global procurement functions.

Looking at the big picture, it could be argued that the high degree of uncertainty present in offshoring decisions necessitates some decisions to be made at least partially based on a risk as feelings-assessment. Companies and decision makers have a huge mental "exit-barrier" to abandon an offshoring project simply because accurate MA information is not available – thus relying on "professional judgement" and "the feel acquired" becomes an acceptable manner of making a decision in order to move things forward.



### 5.1.5 Improving the decision making process

All interviewees agreed that the main problems encountered during the decision process related to the lack of a predetermined systematic approach. While the process as a whole was seen as a success, especially when compared to the lack of previous experience, several concrete action points for improvement were identified from the interviews, including:

- Systematizing and sequencing the processing of main subdecisions
- Improving running documentation of decision making
- Improving the decision making framework for FDI
- Setting up a formal project organization sooner in the process
- Communicating top management's objectives clearly to the offshored facility's management
- More careful consideration of cultural differences

In response to the identifying these action points, a synthesis package was constructed. The goal of the package was to on one hand deliver all the valuable insights from this research to the case company, and on another hand to invite comments and validation from the company's management on whether these action points would truly make daily decision making more efficient. The package included for example a document template for documenting the running documentation, an augmented decision making framework and calls to action to discuss how the case company could improve their communication and cultural intelligence.

In response to the package, CompanyA\_Person1 stated that the whole interview project was a beneficial exercise for the company, in that it encouraged them to reflect on how decision processes should be viewed in the future. He especially saw the document template for documenting running documentation of decision making as useful. Thus there is support for the argument that simple systematic routines and structured reflection on past decisions can make offshoring decision processes more efficient and informed.

## 5.2 Findings from case company B

### 5.2.1 Description of decision process

The backdrop for this case was laid in early 2000's, when the company acquired a Finnish producer operating in the same industry. The acquisition meant that company B marginally branched out within its industry, intending to make use of synergy benefits like similar customers and possibilities for solutions selling. Along with the acquisition came a production facility in Country BX. This facility was not seen as a strategic asset – it

merely provided an interesting possibility to establish a presence in Eastern Europe and serve customers in Central Europe more easily.

The decision to backshore production from Country BX to Finland came after about 10 years of operation. The decision process was markedly shorter than the offshoring case of company A: only about a year from first talks to initiate the process to the final decision. The process was initiated by the then production manager of the location to which production was eventually backshored.

All in all, the bulk of decision making was done by the board chairman, who is also a member of the family that owns the company, and CompanyB\_Person3, the then responsible of maintaining the operation in Country BX. No separate project organization or formal decision processes were utilized in arriving at the final decision, although the backshoring decision as such was considered a project.

Two main reasons to backshore were identified in this case. Firstly, the backshored facility made substantial losses for a prolonged period, over its whole existence within company B. One of the key reasons for the poor profitability was a barely existing local market for the products made in the facility. The cornerstone of the company's competitive strategy was to provide tailored, high-quality products with fast lead-times to customers they knew thoroughly. However, this strategy, which was highly effective in the domestic market of Finland, did nowhere near as well in Country BX and Eastern Europe. The customers demanded low-cost products and were reluctant to establish long-lasting supplier-relationships with the case company, which resulted in a low but highly volatile demand pattern for the facility. On average, the demand for the products manufactured in Country BX was only about one sixth of the volume demanded from its Finnish counterpart. The production basically had to be transported all the way to Finland in order to be sold, which was seen as unsustainable.

Secondly, the business unit was systematically viewed as separate from the core competence of the company, making it that much easier to sell. The facility was a part of a business unit in one of the company's divisions that produced products mainly from thin metal sheets. This facility, however, utilized a markedly different production method, involving e.g. sewing and usage of components made of completely different metals. Another major difference from the rest of the division was that while most of the products could be sold to a certain type of customer, namely construction companies and their suppliers, the products from the business unit were targeted towards customers such as hotels and property maintenance firms. While intuitively close, these customer segments turned out to require very different types of service and lead-time. This degree of separateness and lack of synergy had become a foundation for mentally locating the business unit outside the core activities of the company.

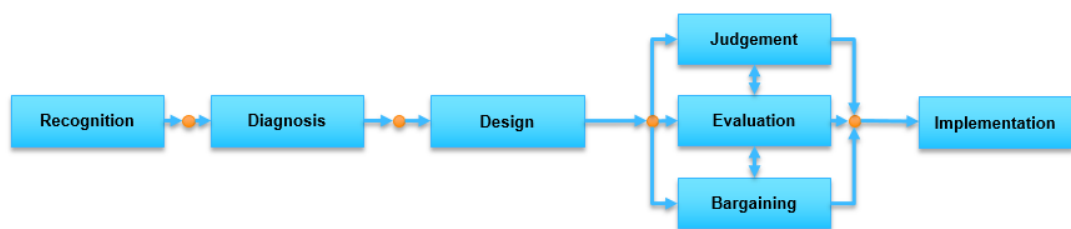
The decision process itself advanced as follows. After the issue was raised, the board and CompanyB\_Person3 began contemplating the strategic level issues of the decision: in which of the domestic locations should production be backshored to? What should be physically brought in from Country BX? How to ensure knowledge transfer? The team also wanted to find a way to preserve the work force in Country BX, so they came up with replacement production that made more sense in the Country BX's and East European market.

After the higher level decisions had been made, CompanyB\_Person3 was given a mandate to implement. A step-by-step action plan was then designed, with the help of a personal visit to the site in Country BX. The physical backshoring operation involved simultaneously moving production equipment and knowledge from Country BX and from a second Finnish location of company B to the final backshore-location, as well as transferring equipment from the final location in Finland to Country BX to start the replacement production there.

Retrospectively the interviewees thought that the whole backshoring process was successful and conformed to expectations. The main risk related to the relocation was a period of a couple of weeks in which both the Country BX and the Finnish locations were ramped down and sales relied on a buffer stock accumulated earlier. No major draw-backs of any kind were met, however. The only point of improvement that the interviewees mentioned was to be more precise about product documentation, relating to products that ended up being the replacement production for the Country BX facility.

### 5.2.2 Analysis of the decision process

As mentioned in the previous chapter, company B's decision process was significantly more straightforward than the offshoring case of company A, as visualized in Figure 15:



*Figure 14: Company B's decision process*

The process basically did not include any sub-decisions, as the major question was about transferring production from one owned location to another. The only key discussion to be had was about what exactly should be brought in from Country BX to Finland (machinery, information, key personnel etc.) and what to have produced in Country BX for

replacement. This discussion forms the core of the decision process from Design to the Judgement/Evaluation/Bargaining nest.

The attitudes of the interviewees reflected the apparent simplicity of the decision. CompanyB\_Person3 described the decision making process as “straightforward, data-driven and swift”, and that the decision makers had to deal with very little uncertainty. This raises the question of whether the company had had up-to-date information and awareness of when the parameters shifted enough to make a backshoring decision favorable. It is possible, that to some extent the swiftness of the decision process was a result of parameters shifting far enough (i.e. losing the economic sense of keeping the facility in Country BX) to make backshoring “a no-brainer”.

### 5.2.3 Role of MA information

For the role of MA information, a helpful mindset is to separate the decision into pre-implementation considerations and implementation considerations. Practically no MA information was separately drafted to support the pre-implementation decision of “whether to backshore or not”. This decision was seen as a must-have, as CompanyB\_Person3 stated:

*Once the issue had been raised for consideration to the board, no-one saw practical counter-arguments to backshoring.*

As this was the general consensus among the team members, there were no separate demands for specific MA information items to support the decision. The only pre-implementation MA information item mentioned by the interviewees was the general production cost levels in Country BX and Finland. While it was slightly higher in Finland, the profit potential remained much higher for domestic production. Once the decision to backshore was officially made, MA information started to play an important role. Accounting issues explored included labor cost, logistics cost, profitability, product level costs and customer preferences in East Europe – all items that most of all related to deciding upon the specific products to be made both in Finland and Country BX. The accuracy of MA information was seen sufficient overall. This is most probably due to having to deal with only two locations, both of which were owned by the case company and thus measured in a manner that allowed precise assessments to be made.

### 5.2.4 Perception of risk and benefit

As pointed out in the previous section, the accuracy of accounting information created a situation where “there is practically no uncertainty”, as CompanyB\_Person3 stated. There were no indications of basing the decision on a risk as feelings-source. The lack of perceived uncertainty even led to an environment where failure of the project would have

been attributed to carelessness or inability to take clearly provided information into account, instead of an unprecedented external factor. Compared to the offshoring case, this is almost an opposite situation: the lack of perceived uncertainty might even create a false sense of security and inability to take higher level strategic risks into account. This is only speculation, however, and as it happened in this case, all the risks seemed to be taken into account fairly well, since the whole team considered the backshoring operation a major success.

### **5.2.5 Improving the decision making process**

The only room for improvement in this specific decision case was identified by CompanyB\_Person3, who mentioned product documentation as something that could have helped in transferring key process knowledge between national boundaries. Additionally, CompanyB\_Person2 indicated that in his view the general manner of decision making in company B lacked a degree of systematicity and reliance on rigorous calculations. In terms of this research however, these points are too specific and vague (in respective order) to be worth exploring in detail to improve future decision processes for the company.

In response to the suggestion package, CompanyB\_Person3 stated that the most valuable pieces in the findings of this study related to quantifying the benefits of domestic production: quality, flexibility and trustworthiness of suppliers. He saw that clear indicators and metrics related to these factors could have a decisive role in future off- and backshoring decisions for companies in Finland. On the other hand, he pushed back against the notion that relying on non-systematic analysis methods can be real weakness for decision making teams. He stated, that professional judgement is a truly valid tool in evaluating manufacturing relocation decisions, and that no systematic analysis methods exist that could capture all the different nuances that go into evaluating these decisions. Thus there is now a call for work in the field of quantifying hard-to-quantify factors, such as quality, flexibility and trust in developed countries vs. common offshoring locations. Also, CompanyB\_Person3's comment on professional judgement is perhaps a signal of the reality of day-to-day managerial work: making complex decisions seem to require some degree of judgement and gut-feeling, as sufficient methods of systematically going through the myriad interconnected factors do not yet exist.

## **5.3 Findings from case company C**

### **5.3.1 Description of the decision process**

Company C's decision to backshore production from Country CX to Finland took place over a period of about 4 months in the early 2010's. The company had recently held a

string of meetings to update their strategy, which would henceforth focus heavily on understanding customer needs and providing tailored solutions. It was concluded, that the competitive edge of company C lies in providing not just cost savings, but also productivity, safety and even indirectly increased sales. This would be achieved mostly by utilizing intelligent innovations by strategic partners in Finland. Such innovations had not been utilized by company C before, so investigations into how the new strategy could be implemented in practice were needed. These initial investigations revealed that maintaining a production facility in Country CX and taking the most out of the new innovations was in fact not feasible simultaneously, since the facility could not accommodate the requirements of the new technology.

CompanyC\_Person1, the then COO, brought this matter to the board, suggesting that the option of relocating the facility in Country CX to Finland, Eastern Europe or the Baltics should be considered. He was given a mandate to investigate further. After about a month later, the information gathered convinced the board to give a green light to relocate. Further three months were needed to gather supporting information that allowed the final decision to backshore into Finland to be made. The bulk of investigating was done by CompanyC\_Person1, with significant contributions from the then business development manager CompanyC\_Person2 and the then CEO of the company. Final authorization came from the board.

The root reasons that rendered Country CX financially unattractive were two-fold. First, with tailored products and the lead times the company wanted to achieve, outbound logistics had to rely on expensive air cargo. Second, the innovations by strategic partners in Finland would also have to be transported over huge distances for assembly, and then back again to European customers. In fact, these logistics costs more or less nullified the cost benefit of low labor costs in Country CX, compared to Finland or European locations.

CompanyC\_Person1 stated that while locations in several countries were considered, there was no separate phase of deciding upon a country first. All location candidates were initially treated as equals, which were then analyzed in detail. The analysis was structured into three main components: product development and ramp-up, production and logistics. Each component depended on the location in differing amounts, meaning that the “puzzle” had to be composed separately for each location to arrive at comparable figures. It should be noted however, that the company had just updated its strategy and faced a new way of working with the new innovations. Therefore, the calculations and analyses could mainly be based on estimates and scenarios.

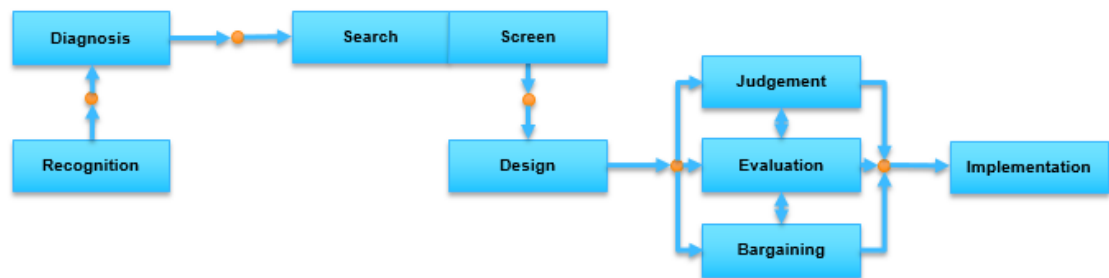
In the end, the decision came down to two locations in Finland and one in the Baltics. Visits were made to each location to support the decision. CompanyA\_Person1 stated that the locations compared quite even against each other, and that it was more or less “the simple benefit of manufacturing at home” that was the crucial factor. When probed further, he said that the main benefit about Finland, in this case, was the amount of trust

between contractors and the spirit of helping a fellow Finnish business. This seemed to be a major factor into why the implementation of the decision could be successfully undertaken in less than six months, faster than the decision makers expected.

CompanyC\_Person1 mentioned two main risk categories that they should have considered more carefully: component availability / supply efficiency and quality issues. Perception of these risks originated in a situation, where one of the potential new suppliers was not audited carefully enough. Otherwise, the interviewees did not see much to improve in this instance of decision making.

### 5.3.2 Analysis of the decision process

The decision process was markedly similar to that of company B, with the exception of a brief Search/Screen phase to determine whether to relocate the production to Finland, Eastern Europe or the Baltics, as visualized by Figure 16:



*Figure 15: Company C's decision making process*

The process started with recognizing a problem with the compatibility of the company's current assets, especially the production facility in Country CX, to the newly updated strategy that involves utilizing innovations from Finland. Next, after making the board aware of the problem, the COO was tasked with diagnosing the situation and providing a suggestion. After this quick diagnosis phase, a decision of intent was made to relocate closer to home. A phase of searching for existing location candidates was begun. No special interest was shown towards locking a target country first. Candidates were found in Poland, Finland and the Baltics. The candidates were subsequently screened in terms of three major factors: product development and ramp-up, production and logistics. The three final candidates were evaluated in detail and visited personally, after one of the two finalist locations in Finland was chosen. Company3\_Person3 stated that while a lot of thoughtwork went into the process, there was no preset systematic way of going about it – rather, all of the factors considered were assessed on an ad hoc basis.

### 5.3.3 Role of MA information

The role of MA information remained quite static throughout the process, as it was mainly used as an answer / learning machine to shed light into the uncertainty that the newly updated strategy had cast over the company's future. Calculations and analyses were needed to compare individual location candidates and simulating production and assembly with the new components that the new innovative solutions required. The choice of relocating to Finland was locked quite early on, meaning that the bulk of the accounting information was used to support decision making relating setting up a supplier network. No evidence of political behavior or justifying past decisions were found, meaning that MA information was most probably not used as ammunition or rationalization machines. Lastly, it should be noted that the general decision to relocate production was in no way supported by MA information. Instead, the triggering information was created by arriving at a strategy that could not be sustained by remaining in Country CX.

### 5.3.4 Perception of risk and benefit

To some degree, company C's situation was very similar to company B's in terms of risk perception: the decision came down to moving production from a well known supplier to a supplier network in Finland, which as a nation was obviously thoroughly familiar as well. However, two things differentiate the two cases: company C had a brief phase of considering several country alternatives, followed by having to deal with setting up a new supplier network from scratch in Finland. The overall decision to relocate production was perceived to be of zero risk, as CompanyC\_Person1 stated:

*Whatever the case, we would be better off by relocating from Country CX.*

In other respects, the uncertainty was seen as even rather high, especially with the bilateral relations to new suppliers that would enable company C's new strategy of employing cutting edge technology and remote control in their solutions. This was explicitly stated as the riskiest aspect of the whole project.

A conclusion could be thus drawn, when the situation of facing several new potential suppliers is compared to evaluating several location candidates for an offshoring project: the perceived riskiness of production relocation projects is connected to the amount and external facilities, companies and organizations that are considered as either the focal production facility or as parts of the new supply network.

### 5.3.5 Improving the decision making process

The only aspect that the interviewees from company C saw as worthy of improving was the risk assessment process, in their case relating specially to selecting and setting up a



supplier network in Finland. The company faced a single case of a fairly important supplier that did not respond to expectations and threatened to hinder the implementation plan significantly. No major damage was accrued in the end. In other respects, it seemed that the perception of low uncertainty left no further room for improvements in the general process of making the decision.

In response to the suggestion package, the interviewees did not have much to say, other than that they agreed with the findings. This is taken to indicate support for the main conclusions of this thesis.

## 5.4 Synthesis

If a step is taken back to look at the research results as a whole, comparing the offshoring case to the backshoring ones, the following insights can be drawn for offshoring and backshoring of production:

Offshoring:

1. Compared to backshoring, offshoring is like entering a fog of war – all new location considerations are shrouded in uncertainty due to distance, mismatching accounting practices, cultural differences etc. Reliable information sources and a systematic decision making process are crucial to successful decisions
2. Offshoring companies should recognize that individual location decisions have to be made based on inferior information. Controlling the usage of non-accounting information (professional judgement, bias, preference) is of great importance.
3. Companies planning to offshore need new ways to quantify the benefits of domestic flexibility, quality and cultural aspects, as they are frequently found to be more valuable than expected in hindsight.

Backshoring:

1. It seems that many times backshoring decisions are triggered by realizing that the company will be better off by backshoring in any case. Optimally, companies should keep track of how the cost/benefit balance between an offshore and domestic location develops over time to avoid such situations – which again calls for quantifying the benefits of domestic flexibility and quality.
2. Companies seem to perceive backshoring decisions as involving ”practically zero uncertainty” due to knowing both locations involved in the final decision so well. This might make them vulnerable to poor planning.

In very concise summary, companies would benefit most from improving the decision making practices, ensuring sufficient information from reliable sources to support the decision making and quantifying the benefits of domestic production. The end result could be a lessened amount of manufacturing relocations overall, as the total value of domestic

production was more efficiently perceived and perhaps also utilized to a greater extent. From the point of view of the Finnish economy, applying these changes could have a positive effect on employment rates and economic growth in the long term.

## 6. DISCUSSION AND CONCLUSIONS

This chapter presents the answers to the four research questions, evaluates how the findings contribute to research in this field, what implications managers can draw from the thesis, limitations of the research and possible topics for further research.

### 6.1 Answers to research questions

The literature review for this thesis revealed four major research gaps in how we understand offshoring and backshoring decisions, namely the day-to-day decision process models; the role of accounting information in them; how perceptions of risk involved in the decision are created; and what how could the decisions be made more efficient. The conducted case studies successfully explored these gaps and provided insights for both immediate practical use and for the leverage of further research.

#### 6.1.1 Modeling relocation decisions

The first research question was set, targeting a specific question of the ROaMING project (Heikkilä 2015) as:

How can offshoring and backshoring decisions be modeled?

The research indicated that the decision making processes differ crucially between offshoring and backshoring decisions. However, it was found that they all could be modeled to relatively accurate extent by utilizing the strategic decision making model by Mintzberg et al. (1976).

The offshoring case was a complex one, involving four major subdecisions, namely investment type, product mix to be produced, target country and final location. While some sequencing could have arguably been done to fast-track the process, the interviewees stated that all of the subdecisions were considered more or less simultaneously. The process was led by three primary decision makers, supported by the board of the company. The process was marked by a degree of novelty and lack of experience of similar decisions, which meant that the process included several fits and starts, lack of systematic thinking in arranging the decision making process and organizational learning as the process advanced. However, compared to the initial driving factors which effectively became the objectives of the whole investment effort, the decision turned out to be surprisingly successful.

The two backshoring cases indicated that these decisions are made from a position of more accurate knowledge, experience and vision. In terms of the strategic decision making model, the backshoring decision processes were dramatically simpler and shorter in time. The main reason for this difference in relation to the offshoring case was the simple fact that the backshoring cases were made concerning two well known or owned locations, which were therefore fitted with accounting practices that accurately serve the decision makers' needs.

### **6.1.2 The role of management accounting information**

The second research question was set, again targeting ROaMING (Heikkilä 2015), as:

What is the role of managerial accounting information in offshoring and backshoring decisions?

This question was successfully explored utilizing a framework by Burchell et al. (1980), presented in Figure 10. The role of management accounting information was found to change as the offshoring process moved forward, but the most important finding was that while a great amount of MA information was needed for the whole decision to be made, it was rarely accurate enough to negate the need for qualitative assessments. The opposite was true in the backshoring cases: the role of MA information was quite clearly an answer machine when it came to the question of whether a backshoring decision should be made. In both cases the decision did not even require specific MA information items outside day-to-day reporting to be made. This was due to the fact that backshoring companies know each location very well, and that backshoring decisions more often relate to factor that is hard to quantify, such as a lack in quality of flexibility.

### **6.1.3 Perception of risk and benefit**

The third research question was set, targeting a research gap indicated by Mihalache & Mihalache (2015), as:

What factors influence decision makers' assessments of risks and benefits relating to offshoring and backshoring of production?

A two-factor model was created strongly based on the work of Slovic et al. (2005), where risk perceptions are contributed to from two main sources: risk as analysis and risk as feelings. The offshoring case indicated that the high degree of uncertainty that comes with having to consider several varying location candidates, product mix possibilities and investment type options means that at several points in the process MA information is not enough to create a solid information base for decisions to be made. The perceived riskiness of subdecision options were seen as high, and most interestingly final location candidates were ultimately judged by "the feeling acquired" from personal visits to the sites.

In conclusion, while decision making mostly relied on factual data and accounting practices, a significant amount of decisions along the process were at least partly supported by risk assessments that originate from feelings. In other words, a significant amount of the perceived risk levels is affected by non-systematic analyses and methods.

In the backshoring cases the amount of relevant and accurate MA information created an environment that was perceived almost void of uncertainty. In both backshoring cases, the need to backshore in the first place was very clear, and the only real decision to be made was that of what and how to produce domestically. It could be argued that this perceived confidence in information quality could even be harmful, if decision makers become overly confident.

#### **6.1.4 Efficiency of decision making**

The fourth research question was set, targeting a research gap stated by K.C. (2015), as:

How could companies make more effective offshoring and backshoring decisions?

Each case company was provided with a summary of the research specifically considering them, including an assessment of how their decision making in subsequent foreign direct investments could be improved. After analyzing both the interviews that explored interviewees personal views of possible improvements and the comments that were received about the concrete improvement suggestions, two main areas of improvement arose: the decision processes themselves and quantifying the value of producing domestically more precisely.

The first could be achieved mainly by having companies reflect on their respective practices and routines of making decisions. Is there a clear running documentation of how the process advances? Are reliable information sources utilized? Does the process as a whole follow a fitting framework for the decision at hand?

The second is much harder to implement, as no standardized methods of quantifying factors such as quality, flexibility and trust compared between different locations exist yet. Thus it is taken as a very prominent target for further investigation and research.

### **6.2 Research Contribution and managerial implications**

The findings of this thesis provide valuable insight into how decisions about manufacturing relocation are actually made in the board rooms of companies.

One of the major high-level conclusion of this research is that the immense amount of failed offshoring decisions globally results mainly from the degree of complexity these decisions involve. Offshoring is like venturing into a proverbial fog of war, or a fog of

uncertainty that covers all parts of the world that the offshoring company does not know intimately. Not only do companies need to uncover relevant information from under the fog, but they also need to make decision on where to aim their limited information seeking resources in the first place. It was also found that without prior experience, companies can be somewhat overwhelmed by the complexity of offshoring projects. Following pre-set decision making frameworks, routines and rigorous data-based decision making processes decreases the chance of failure, but keeping oneself constantly aware of the myriad of moving pieces that offshoring decisions include seems to be too large a challenge for many companies. Companies should invest effort in setting up rigorous systems that support systematic decision making, as well as finding suitable, relevant and sufficient information sources about individual location candidates.

Meanwhile, backshoring is usually seen as a straightforward investment decision between two alternatives: the offshored facility and a domestic location. Usually, both locations are very well understood and measured by management, which makes comparing the alternatives and making informed decisions simpler and easier. The research showed that on a general level this is true: backshoring projects are shorter, simpler and require less resources to manage. On the other hand, this perceived lack of uncertainty might prove problematic to companies either as a false sense of safety or as a signal of letting the situation go sour enough to justify a backshoring operation in all scenarios.

One clear indication of contribution to existing literature was that this thesis could uncover a fact that could not have been uncovered from the survey data conducted for the ROaMING project. The survey data was initially interpreted to argue that companies require more detailed management accounting information before daring to backshore – however, as this investigation states, it is the innate familiarity and common accounting practices of two owned or well known locations that give rise to very detailed accounting information in backshoring decisions compared to offshoring decisions, not a specific need to produce that information.

### 6.3 Limitations and mitigation efforts

Weaknesses of the research strategy were outlined in section 4.3. In response, several concrete actions were taken to ensure the quality of the research. These are presented in Table 12:

*Table 12: Mitigation methods to ensure research quality*

Attribute to enforce	Mitigation methods
<b>Validity</b>	<ul style="list-style-type: none"> <li>• Informing interviewees about the themes of the research in advance in order to allow them to properly prepare to provide relevant information</li> <li>• Have key informants review the results</li> <li>• Proper background work to understand possible sources of bias in interviewing and analyzing data</li> <li>• Triangulation through mixed-method research (Saunders et al. 2009)</li> <li>• Triangulation through verifying accounts from more than one interviewee within the same organization (Saunders et al. 2009)</li> </ul>
<b>Reliability</b>	<ul style="list-style-type: none"> <li>• Rigorous documentation of the research process and rationale behind research strategy choices (Stenbacka 2001)</li> </ul>
<b>Generalization</b>	<ul style="list-style-type: none"> <li>• Selecting interviewees that were either the decision makers or close to the decision making process (all of which still worked in the focal company)</li> <li>• Using an intervention to cause ripples in the normal flow of interviewees' views about decision making, and to see if research results are seen to have practical value</li> </ul>

Having utilized these measures, it can be assumed that the study reached a sufficient level of scientific rigor in qualitative research.

## 6.4 Topics for Further Research

Three important topics were identified as possible starting points for further research.

Firstly, the research did not completely reach the anticipated depth in investigating how MA information was used in the case decisions. Its role in various parts of the process was uncovered, but further research could be aimed at understanding the information needs and suggested accounting information tools of various sub-decisions in more detail.

Secondly, the two backshoring cases revealed how intricate and varying backshoring projects really are: company B relatively simply transferred machinery and knowledge from one owned location to the next, while company C arrived at owning domestic production by first transferring outsourced foreign production to a network of domestic suppliers. The task of constructing the supplier network from scratch added a whole dimension of uncertainty to the second case, which makes directly comparing the backshoring cases problematic. Further investigations could go deeper into understanding the methods of relocating production, as now the umbrella term of backshoring includes a rather wide array of different situations.

Finally, a strong encouragement is given to finding ways to quantify or otherwise make concrete the hard-to-quantify benefits of domestic production, such as quality, flexibility and trust. This might have a true effect in keeping domestic companies from venturing into unnecessarily risky offshoring projects, only to learn the value of those benefits the hard way.



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## APPENDIX A – EXAMPLE OF INTERVIEW QUESTIONS

These are the questions that were prepared for interviewing CompanyA\_Person1:

- Please shortly state your background in the company. Also specify your role/roles in the focal location decision
- How would you describe your company's competitive advantages over your competitors?
- How did the decision process begin?
  - o When?
  - o What motivators were there for it?
  - o Who initiated the process?
- What do you think were the most important reasons for having to make this decision?
- How did you begin to solve the problem of deciding the location?
- What kind of calculations, analyses and plans were used?
- What kind of metrics/checklists were used to assess risks and benefits of each option?
  - o How were risks mitigated?
  - o Were there any realized risks along the process?
- What were the decisive benefits of the chosen location over other options?
- What are the negative sides in the chosen location?
- What positive and negative feelings do you have about the decision making process as a whole?
  - o What did you think about the group dynamic of the decision makers?

## APPENDIX B – SAMPLE FROM IMPROVEMENT SUGGESTION PACKAGE

